

Retraction

Retracted: AI-Based Secure Undergraduates' Ideological and Political Public Opinion Strategy

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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- [1] Z. Chen, "AI-Based Secure Undergraduates' Ideological and Political Public Opinion Strategy," *Security and Communication Networks*, vol. 2022, Article ID 8052594, 10 pages, 2022.

Research Article

AI-Based Secure Undergraduates' Ideological and Political Public Opinion Strategy

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The popularity of the Internet makes everyone have the right to speak. People are no longer passive receivers of information but propagators of information, and for this reason, cyber opinion comes into existence. Some social events that can arouse people's sympathy and are related to people's vital interests will eventually form cyber opinions through netizens' comments, discussions, and forwarding. As members of the society, undergraduates have different interests, political tendencies, and social cognition. When making judgments and comments on controversial hot issues, undergraduates will make their own correct judgments of authenticity according to their own knowledge and social experience, which will make the propagation content of public opinion more diversified. Especially for ideological and political public opinion, it is very important to ensure the safety of the public opinion propagation model intelligently. In this paper, first, cellular automata (CA) of artificial intelligence (AI) is used to establish the propagation model of undergraduates' ideological and political safety public opinion and the stochastic immune mechanism model is introduced. Then, a CA-based stochastic immune mechanism model is adopted to simulate the real propagation process of undergraduates' ideological and political public opinion. Finally, the experimental results demonstrate that the moving probability of public opinion subjects has a great impact on the propagation speed and homogenization rate of cyber public opinion and the proposed CA model can well describe the actual propagation process of cyber public opinion. Meanwhile, the proposed propagation model can ensure the propagation of undergraduates' ideological and political public opinion on safety.

1. Introduction

Public opinion is what the public thinks about an issue, a political figure, or an institution at a given point in time [1, 2]. People's political opinions can change over time and are influenced by many factors. Political socialization is the way we develop our political outlook, which begins in childhood with our families [3, 4]. We are influenced by our parents' political values, especially their party affiliation, but schools and our peers also affect our opinions. Many other factors explain the different political attitudes of individuals as well, which are religion, race, ethnicity, gender, age, and socioeconomic status [5]. However, the safety public opinion propagation is based on the Internet. The media attribution of the Internet is becoming stronger and stronger, and the Internet has increasingly become the main platform for the generation, evolution, and propagation of

ideological and political public opinion. So the characteristics of current ideological and political safety public opinion propagation are mainly the characteristics of network propagation. Ensuring the safety of ideological and political public opinion is the foundation of network ideological safety and an important aspect of ideological and political safety [6, 7]. The role of public opinion on ideological and political safety is reflected in the consolidation and support of public opinion on ideological and political safety or the destruction and opposition of public opinion. As a form of public opinion, ideological and political public opinion in colleges has the general characteristics of public opinion [8].

There are two types of ideological and political public opinion on the Internet: positive and negative. The negative propagation of ideological and political public opinion has a negative impact on social stability [9]. It is of great

significance to accurately describe the evolution process of ideological and political public opinion by using the cyber opinion propagation model to prevent the expansion of negative ideological and political public opinion [10, 11].

Representative models for the research on the generation, propagation, and extinction of ideological and political public opinion include the multiagent system model, system dynamics model, cellular automata (CA), etc. Among them, the CA model has strong complexity computing ability and discrete characteristics that can produce self-organizing behavior in the process of simulating evolution, so it has been widely used. As an artificial intelligence (AI) algorithm, CA is widely used in computer simulations. CA uses computation to iterate on very simple rules, so these very simple rules can create complex emergent phenomena through the interaction between agents as they evolve over time [12, 13]. CA has been used in countless video games, as well as in other areas such as mathematics and biology. In addition, CA is a discrete-time evolution dynamic system, which is very suitable for the research of complex and nonlinear systems [14]. Therefore, some scholars introduce CA into the research of cyber opinion propagation, model the time and space factors affecting safety public opinion propagation, deeply analyze some factors affecting the evolution process of cyber opinion, and avoid some shortcomings of the cyber opinion propagation model.

Accordingly, the main contributions of this paper are summarized as follows: (i) CA is used to establish the propagation model of undergraduates' ideological and political safety public opinion, and the stochastic immune mechanism model is introduced. (ii) The process of undergraduates' ideological and political safety public opinion propagation is studied. (iii) The CA-based public opinion propagation model of undergraduates' ideological and political safety is established.

The rest of this paper is organized as follows: Section 2 reviews the related work. In Section 3, the stochastic immune mechanism model is studied. In Section 4, the CA-based public opinion propagation model of undergraduates' ideological and political safety is proposed. The experimental results are shown in Section 5, and Section 6 concludes this paper.

2. Related Work

Currently, undergraduates' participation in cyber opinion is increasing day by day, so the security of ideological and political public opinion should be examined seriously. Many strategies have been proposed in the public opinion propagation model. In [15], considering the individual's emotional factor, the cyber opinion propagation model was constructed. In [16], because the derivative topics might be generated by the news when propagated on Weibo, the authors proposed a two-layer coupled Susceptible-Exposed-Infected-Recovered (SEIR)-based public opinion propagation model. In [17], an SEIR-based social network cyber opinion propagation model was proposed to maximize the range of public opinion propagation. In [18], the media- and interpersonal-based SEIR model was proposed to represent the real propagation of cyber opinion. In [19], the direct

immune-susceptible, contacted, infected, and refractory public-opinion propagation model based on real-time online users was established. In [20], the authors proposed a novel block chain-based social network public opinion propagation model to stop the propagation of false public opinion. In [21], a novel susceptible-infected-vaccinated-susceptible negative opinion information propagation model with preventive vaccination by constructing a two-layer network topology was proposed. In [22], the authors designed a network model of public opinion propagation to accurately guide users to accept correct guidance. In [23], an emotion analyzing method on Weibo was proposed to study the effect of users in social network emotion propagation. In [24], an artificial neural network-based information propagation model was proposed to provide a novel scientific method for the evolution of social cyber opinion. In [25], the authors constructed a dynamic model of cyber opinion propagation to analyze the propagation process of cyber opinion during a pandemic.

There are various public opinions on the Internet. In order to ensure the public opinion in safety, it is necessary to study the evolution trend and regulation mode of cyber opinion. Therefore, some scholars introduce CA to simulate the formation of cyber opinion. In [26], a situational reasoning-based CA for public opinion to predict the possible trend of public events was proposed to predict the direction of public opinion. In [27], the authors designed a CA model for the evolution of cyber opinion. To the best of our knowledge, there is seldom research on undergraduates' ideological and political propagation models and even fewer studies on the CA-based public opinion propagation model. So a CA-based public opinion propagation model of undergraduates' ideological and political safety is studied in this paper.

3. Stochastic Immune Mechanism Model

In this paper, CA is used to establish the propagation model of undergraduates' ideological and political security public opinion and the stochastic immune mechanism model is introduced first in this section. CA can be expressed as tetrad $CA = (C, S, N, f)$, where C is the cellular space, S is the finite set of states, N is the cellular neighborhood, and f is state transition rules.

Stochastic immunity refers to the stochastic selection of some nodes in the network for immunity. After introducing the stochastic immune mechanism, the propagation model of undergraduates' and political security public opinion node states is divided into three categories: robust state, infected state, and immune state. The node state transition relationship is shown in Figure 1.

Robust state indicates that the node has no security risk in the network. An infected state indicates that the node has security risks in the network. An immune state indicates that a node is protected from security risks due to security isolation or continuous security protection measures. The stochastic immune mechanism model randomly immunizes each node in the network at the initial state of propagation (time 0) with a certain probability. Then, according to the Susceptible-Infected-Recovered model (SIR) in biological

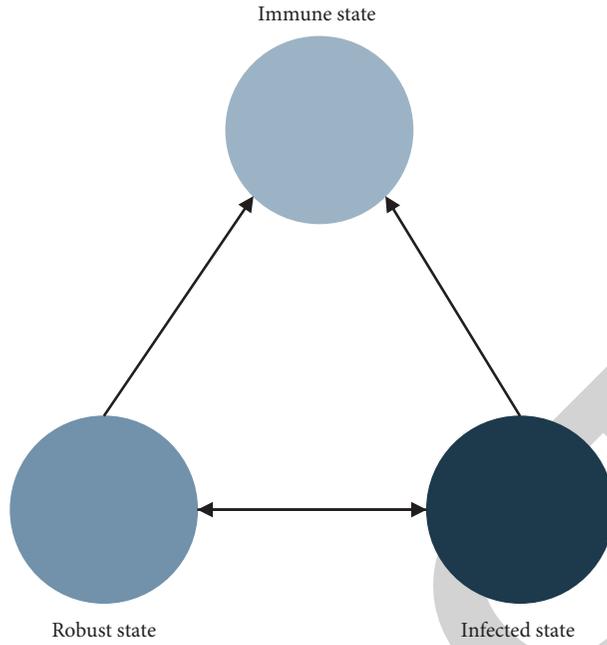


FIGURE 1: State transition of a stochastic immune mechanism model.

epidemiology, the node is cured and immunized with a certain probability at the same time. It should be noted that immune nodes will no longer be infected with security risks from infected nodes, nor will they infect the robust nodes. Therefore, once the node is immunized, the edge connected to the immune nodes should be removed from the network [28] and the adjacency matrix \mathbf{A} of network N needs to be modified. According to the four elements of the CA model, the stochastic immune mechanism model is established as follows:

(1) Cellular space C

A one-dimensional cellular space containing K cells is established, and one cell in the space represents a node in the network.

(2) Finite set of states S

The stochastic immune mechanism model considers the robust state, infected state, and immune state of nodes. Let $S = \{(0, 0), (1, 0), (0, 1), (1, 1)\}$, where $(0, 0)$ represents the robust state, $(1, 0)$ represents the infected state, $(0, 1)$ represents the immune state, and $(1, 1)$ represents the nonexistent state. The state variable of node m at time t is represented by vector $s_m(t)$ ($s_m(t) \in S$). $s_m(t)$ contains two components, which are $s_{m-x}(t)$ and $s_{m-y}(t)$, where $s_{m-x}(t)$ is used to represent whether the node is infected and $s_{m-y}(t)$ is used to represent whether the node is immune, and we have

$$s_m(t) = \begin{cases} (0, 0), & \text{the state of node } m \text{ is robust at time } t, \\ (1, 0), & \text{the state of node } m \text{ is infected at time } t, \\ (0, 1), & \text{the state of node } m \text{ is immune at time } t, \\ (1, 1), & \text{nonexistent state.} \end{cases} \quad (1)$$

(3) Cellular neighborhood N

In stochastic immune mechanism model, the adjacency matrix $\mathbf{A}(t)$ of the network at time t is used to define the neighborhood relationship between cells at time t . The vector of the m -th row in the $\mathbf{A}(t)$ represents the neighbor $N_m(t)$ of node m at time t , that is, $N_m(t) = \{a_{mn}(t) | a_{mn}(t) \in A(t), n = 1, 2, \dots, N\}$. If $a_{mn}(t) = 1$, it indicates that there is a connection between node m and node n that can propagate security risks at time t .

(4) State transition rules f

In the stochastic immune mechanism model, state transition rules are divided into two parts. The first part is the stochastic immunity of each node in the network with probability δ in the initial stage (time $t = 0$). The state transition rules for the first part are shown as follows:

$$s_{m-x}(0) = 0, \\ s_{m-y}(0) = \begin{cases} 1, & h > 0, \\ 0, & h \leq 0, \end{cases} \quad (2)$$

where h is the state transition judgment function, which is defined as follows:

$$h = \delta - r. \quad (3)$$

Equations (1) and (2) are used to judge whether node m is selected to receive immunity in the initial stage. r in equation (2) is the random number between (0, 1), which is used to compare with the immune probability δ to determine whether node m is converted to the immune state: if δ is greater than r , that is, $h > 0$ in equation (2), then the node m changes into the immune state, $s_{m-x}(0) = 0$, $s_{m-y}(0) = 1$, and $s_m(0) = (0, 1)$. On the contrary, if δ is less than or equal to r , that is, $h \leq 0$ in equation (2), then the node m is not immune and keeps a robust state, $s_{m-x}(0) = 0$, $s_{m-y}(0) = 0$, and $s_m(0) = (0, 0)$. Meanwhile, the initial adjacency matrix $\mathbf{A}(0)$ of network N needs to be modified. If $s_m(0) = (0, 1)$, then $a_{mn}(0) = a_{nm}(0) = 0$, $n = 1, 2, \dots, N$.

The second part of the state transition rule applies to the evolutionary stage of propagation (time $t > 0$). In the evolution stage, the infected node infects its neighbor with a probability of σ in every time interval and the infected node also recovers with probability of φ in every unit time. If the infected node recovers at time $t + 1$, the node will become immune with the probability of γ while recovering. The second part of the state transition rule is defined as follows:

$$s_{m-x}(t+1) = \begin{cases} \overline{s_{m-x}(t)}, & h_x > 0 \wedge s_{m-x}(t) = 0, \\ s_{m-x}(t), & h_x \leq 0 \wedge s_{m-x}(t) = 0, \\ 0, & s_{m-x}(t) = 1, \end{cases} \quad (4)$$

$$s_{m-y}(t+1) = \begin{cases} 1, & h_y > 0 \vee s_{m-y}(t) = 1, \\ 0, & h_y \leq 0 \wedge s_{m-y}(t) = 0. \end{cases}$$

When the node m is in the immune state at a time t , that is, $s_m(t) = (0, 1)$, then $s_m(t+1) = (0, 1)$, indicating that once the node is immune, the immune state will remain unchanged. The upper line in equation (4) indicates the reverse operation, and h_x and h_y are state transition judgment functions, which are defined as follows:

$$h_x = \overline{s_{m-x}(t)}(1 - (n_m(t))\log(1 - \sigma) - r) + s_{m-x}(t)(\varphi - r), \quad (5)$$

$$h_{m-y} = s_{m-x}(t)\overline{s_{m-x}(t+1)}(\gamma - r). \quad (6)$$

The minor adjustment in equation (5) is $n_m(t)$. In equation (5), it is used to represent the number of infected nodes adjacent to a node m at time t , and $n_m(t)$ is adjusted to

$$n_m(t) = \sum_{n=1}^N a_{mn}(t)s_{n-x}(t), \quad (7)$$

and if $s_m(t) = (0, 1)$, then $a_{mn}(t) = a_{nm}(t) = 0$, $n = 1, 2, \dots, N$.

Equation (6) is used to judge whether the node m that is infected at time t and returns to a robust state at time $t + 1$ is converted to an immune state, where r is a random number between (0, 1) and is used to compare with the immune

probability γ . In equation (6), when $s_{m-x}(t+1)$ is 0 and $(\gamma - r) > 0$, then $h_y > 0$, which indicates that node m is infected at time t and recovers and becomes immune at time $t + 1$. In other cases, h_y is less than or equal to 0, indicating that node m is not immune.

$R(t)$ represents the proportion of robust nodes in all nodes in the network at time t , $\text{In}(t)$ represents the proportion of infected nodes in all nodes in the network at time t , and $\text{Im}(t)$ represents the proportion of immune nodes in all nodes in the network at time t . Then the model has the following results:

$$\begin{aligned} \text{In}(t) &= \frac{1}{N} \sum_{m=1}^N s_{m-x}(t), \\ \text{Im}(t) &= \frac{1}{N} \sum_{m=1}^N s_{m-y}(t), \end{aligned} \quad (8)$$

$$R(t) + \text{In}(t) + \text{Im}(t) = 1.$$

4. CA-Based Public Opinion Propagation Model of Undergraduates' Ideological and Political Safety

4.1. *The Process of Undergraduates' Ideological and Political Safety Public Opinion Propagation.* The process of undergraduates' ideological and political safety public opinion propagation can be divided into five periods, which are summarized as follows:

- (1) *Generation Period.* Since undergraduates' ideological and political safety public opinion information is facing network users, the period from the occurrence of cyber opinion information to its appearance on the network is called the generation period.
- (2) *Outbreak Period.* When cyber opinion is concerned by netizens, it spreads rapidly through various network media, and the number of users who pay attention to cyber opinion increases sharply, so this period is called the outbreak period.
- (3) *Transition Period.* When the number of users concerned about cyber opinion reaches its peak, the attention of public opinion gradually decreases and the number of users concerned shows a decreasing trend.
- (4) *Spread Period.* Under some special conditions, netizens further mine and spread cyber opinion and the netizens' opinion is mentioned again. Public opinion will attract the attention of netizens again, and the number of users will increase suddenly, so this period is called the spread period.
- (5) *Decline Period.* Cyber opinion is accepted by the network due to fermentation and propagation, and the number of netizens who pay attention to this information decreases suddenly. Finally, netizens lose interest in public opinion, which is called the decline period.

4.2. CA-Based Safety Public Opinion Propagation Model. In the process of cyber opinion propagation, there are three types of attitudes of netizens toward cyber opinion, which are objection, approval, and negativity. Therefore, a CA-based stochastic immune mechanism model is adopted to simulate the real propagation process of undergraduates' ideological and political public opinion. The model abstracts netizens as cellular individuals, and the subject of safety public opinion propagation also has three emotional attitudes, which are specifically described as follows:

$$\begin{aligned} 1, & \quad \text{objection,} \\ \psi = 0, & \quad \text{approval,} \\ -1, & \quad \text{negativity.} \end{aligned} \quad (9)$$

In order to better describe the propagation process of cyber opinion, the cellular space has a two-dimensional square grid structure and the cells are connected up and down and left and right. The subjects of undergraduates' ideological and political public opinion can not only be affected by the tendentious attitude of each cell in the space but also be affected by other cells. Therefore, this paper applies the extended Moore neighborhood rule [29] to realize the information exchange between each cell and all cells in the cellular space.

During the propagation process of undergraduates' ideological and political public opinion, cellular state refers to the attitude of netizens toward public opinion and the cellular state m at $t + 1$ is defined as follows:

$$s_m(t + 1) = \omega * s_m(t) + (1 - \omega) * \sum IF_{mn}(t) * \log cv, \quad (10)$$

where ω is the importance of the cellular state, $\log cv$ is the critical value of the changing cellular state, and $IF_{mn}(t)$ is the effectiveness factor between cellular m and cellular n at time t , which is defined as

$$IF_{mn}(t) = IF_{mn}(t_{\text{last}}) \left(e^{\xi(t_{\text{last}} - t)} + \xi * f(t_{\text{last}} - t) \right), \quad (11)$$

where $f(t_{\text{last}} - t)$ is the memory attenuation function, ξ is the memory attenuation coefficient, and t_{last} is the time when cellular m and cellular n are neighbors at last.

The transformation rules of a cellular state are described as follows:

- (1) If the cellular state value m is greater than the critical value of cellular state change at time t , then the cellular m state becomes positive
- (2) If the absolute value of cellular state value m is less than the critical value of cellular state change at time t , then the cellular m state becomes neutral
- (3) If the cellular state value m is less than the negative critical value of cellular state change at time t , then cellular m state becomes negative

Netizens' opinions and the formation of ideological and political security are not only directly related to their own learning and experience but also affected by social factors (i.e., surrounding neighbors). Therefore, cellular movement is directly related to their own state and that of surrounding

cells. Therefore, this paper introduces cellular attraction, which is defined as follows:

$$f_{mn}(t) = \frac{3}{2\pi} \arccot(s_{mn}(t) - \rho_{mn}(t)), \quad (12)$$

where $\rho_{mn}(t)$ represents the number of neighbors around cellular m .

Moreover, the cellular attraction is normalized and the relative attraction is defined in

$$f'_{mn}(t) = \frac{f_{mn}(t)}{\sum f(t_{\text{last}} - t)}. \quad (13)$$

At each time interval, the cell will move according to the movement probability P_m and select the cellular movement direction CM_m according to the relative attraction. The update of cellular position is defined as follows:

$$In(t) = \frac{1}{N} \sum_{m=1}^N s_{m-x}(t), \quad (14)$$

$$m_y(t + 1) = P_m * m_y(t) + \xi * CM_{m-y},$$

where $m_x(t)$ is the X -axis motion vector at time t , while $m_y(t)$ is the Y -axis motion vector at time t .

5. Experiment and Result Analysis

5.1. Setup. In order to verify the performance of the CA-based safety public opinion propagation model of undergraduates' ideological and political security, the experiment is running on a computer with Intel i9-12900KF, 3.20 GHz, and 32 GB RAM. The process of the CA-based public opinion propagation model of undergraduates' ideological and political safety is shown in Figure 2.

5.2. Comparison Analysis

5.2.1. Influence of the Moving Probability of Public Opinion Subjects on the Spread of Ideological and Political Public Opinion among Undergraduates. As the probability of ideological and political public opinion subject moving increases, the change curve of the time required for the attitude of the whole network of ideological and political public opinion subjects to reach a consistent state is shown in Figure 3. It can be seen from Figure 3 that as the moving probability of the ideological and political public opinion subject slowly increases, the time required for the attitude of the cyber opinion subject to reach a consistent state continues to decrease. This is mainly due to the more frequent propagation of ideological and political public opinion in the whole network as the moving probability of the public opinion subject increases, which is consistent with the real network ideological and political public opinion dissemination process.

5.2.2. Influence of Moving Probability of Ideological and Political Public Opinion Subjects on Homogeneity. With the increasing movement probability of the ideological and

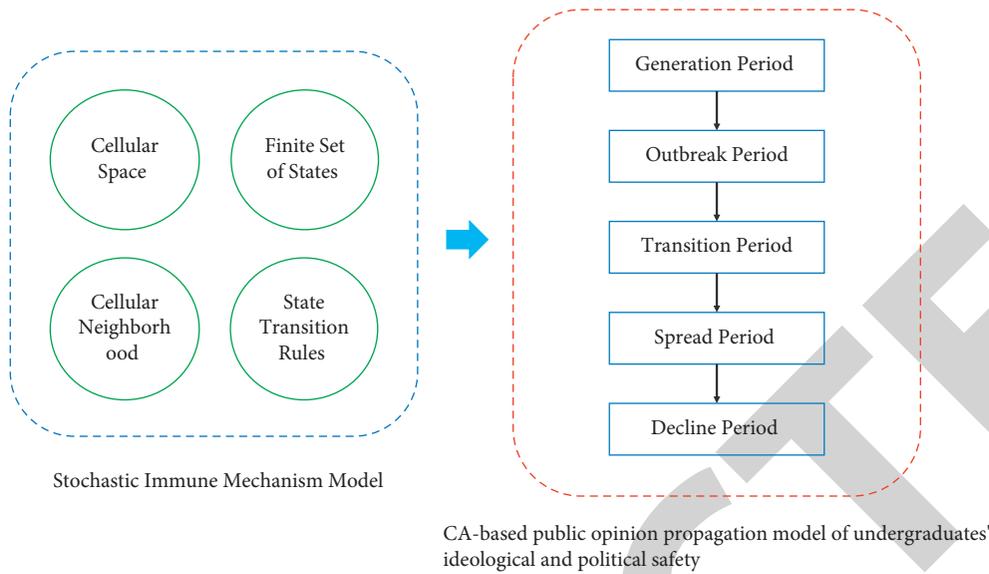


FIGURE 2: CA-based public opinion propagation model.

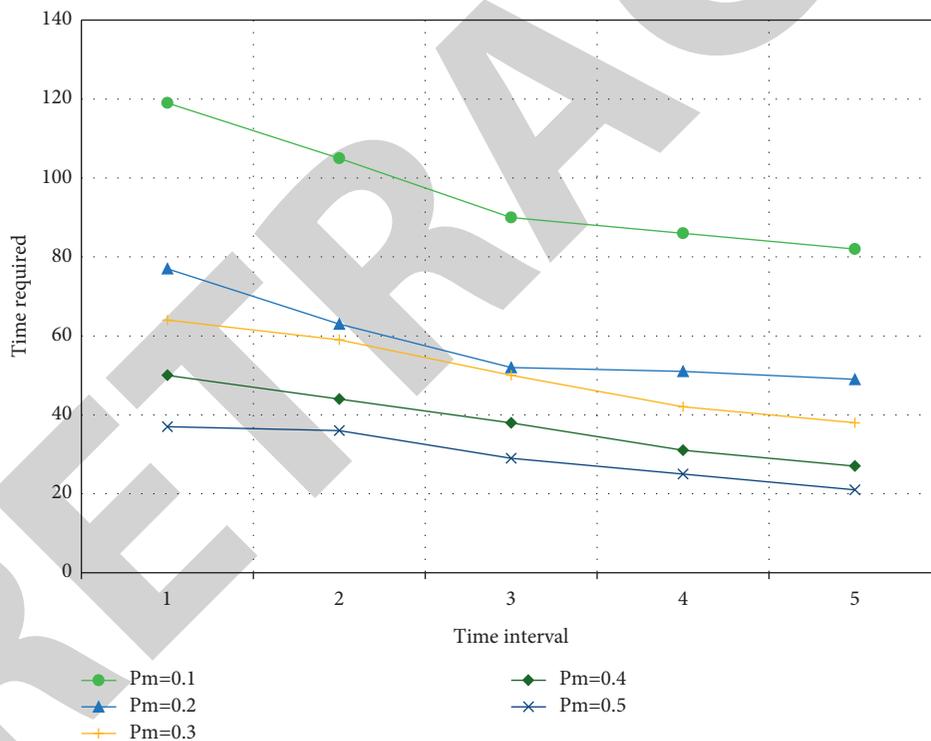


FIGURE 3: Relationship between subject movement probability and time required to reach a consistent state.

political public opinion subjects, the change curve of the homogeneity probability of the whole cyber opinion is shown in Figure 4. As can be seen from Figure 4, with the gradual increase in the moving probability of ideological and political public opinion subjects, the homogeneity probability of cyber opinion gradually increases. This is mainly because, with the increase of the moving probability of public opinion subjects, the information flow between public opinion subjects is accelerated and ideological and political public opinion quickly approaches the attitude with a large

number of subjects, so that the whole ideological and political public opinion subjects show a high degree of identity.

5.2.3. *Influence of the Memory Attention Coefficient on Ideological and Political Public Opinion.* The influence of the memory attention coefficient on the change of ideological and political public opinion is shown in Figure 5. It can be seen from Figure 5 that when the memory attention coefficient changes, the difference in the evolution results of

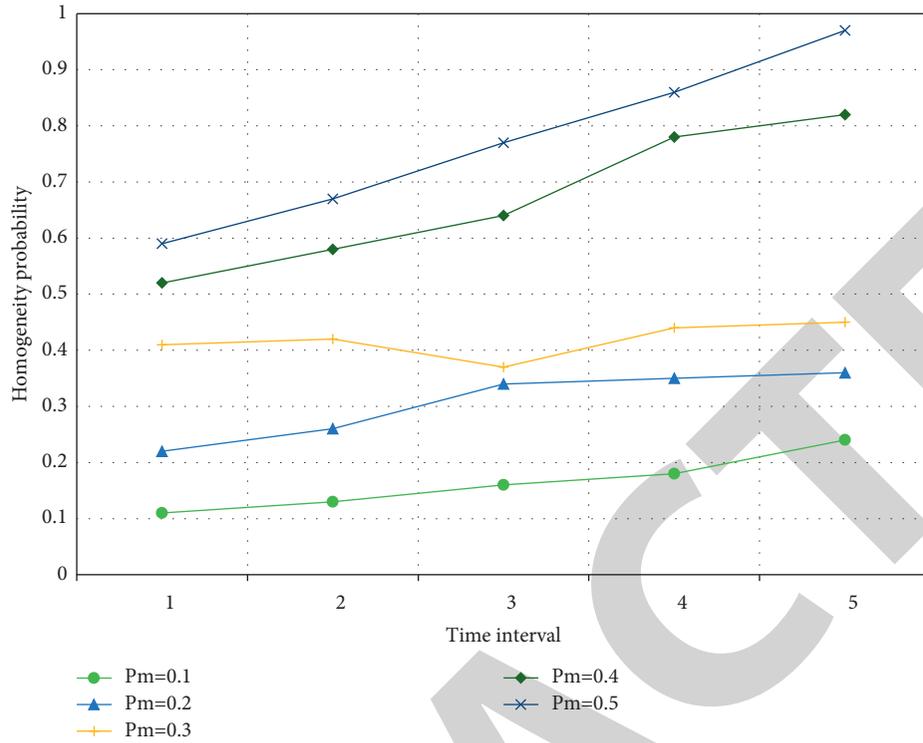


FIGURE 4: Relationship between subject movement probability and homogeneity probability.

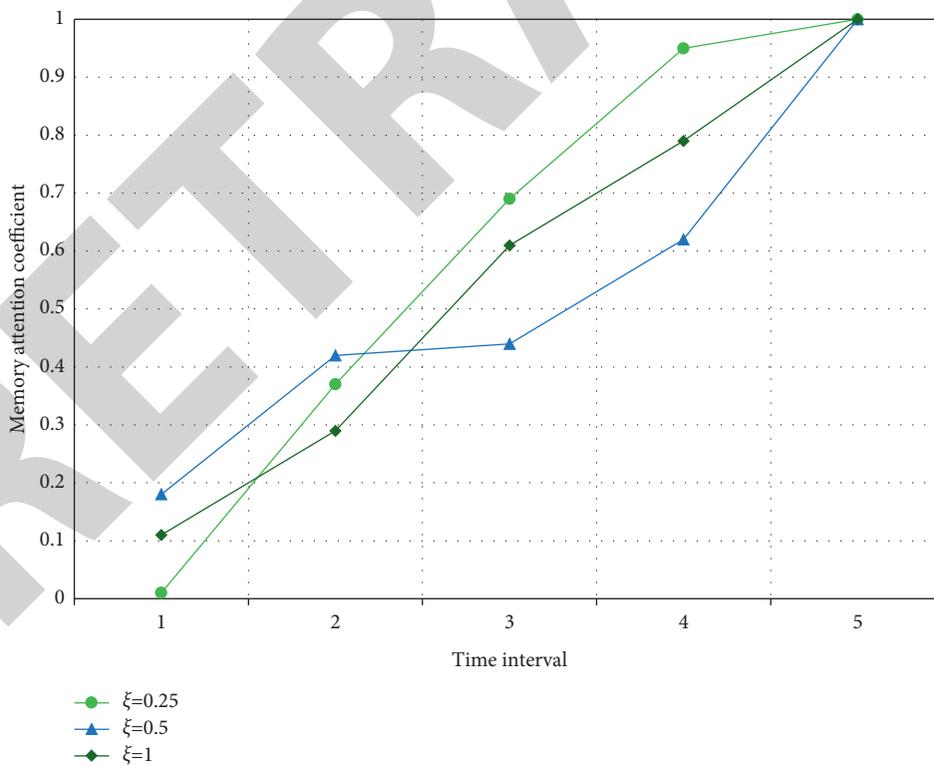


FIGURE 5: Influence of the memory attention coefficient on the change of ideological and political public opinion.

cyber opinion is very straightforward, which shows that the communication frequency between cyber opinion subjects is closely related to the memory attention coefficient. When

the memory attention coefficient is small, the direct impact between the two subjects is relatively small. In this paper, ξ is set as 0.5.

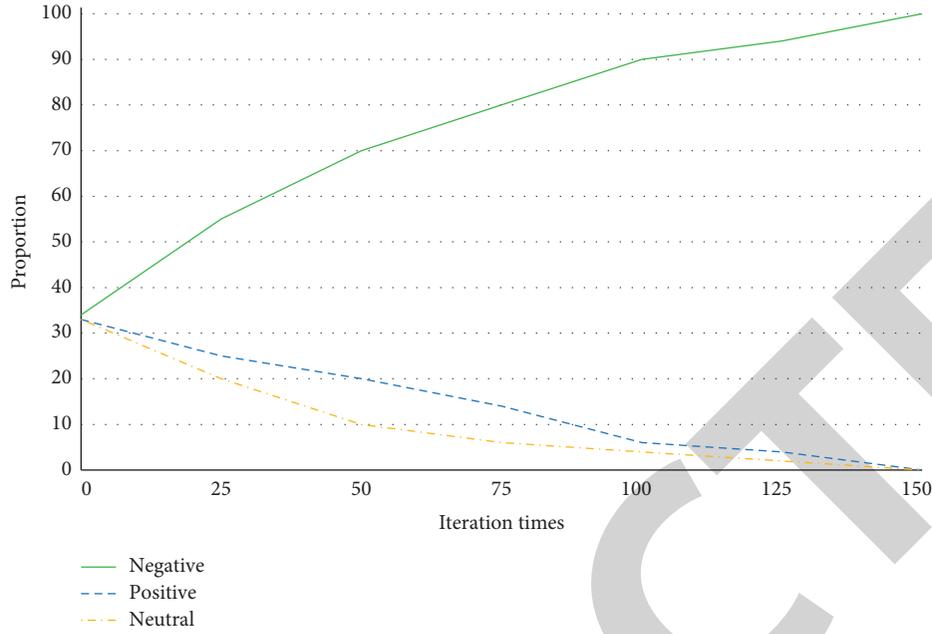


FIGURE 6: Changing in proportion of each state.

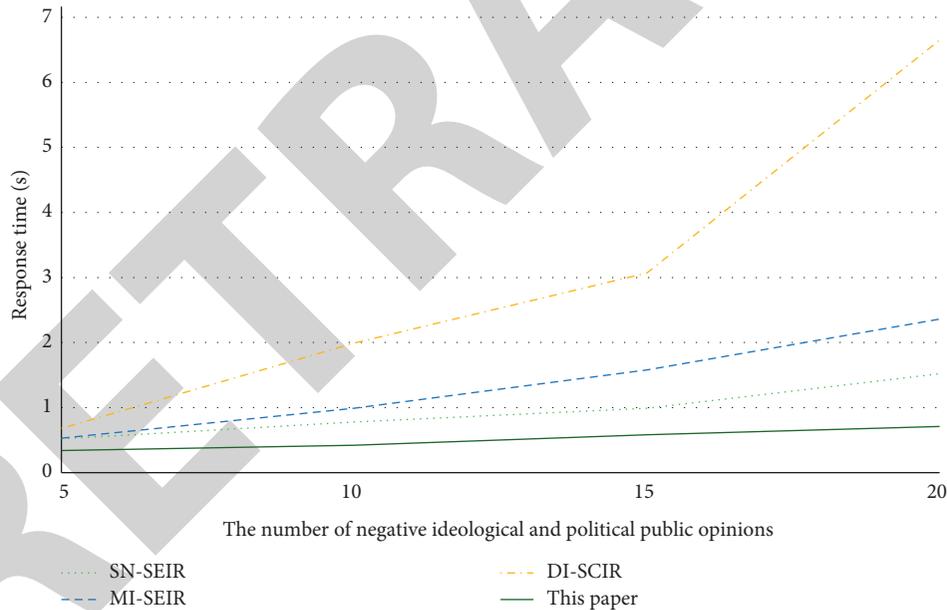


FIGURE 7: Response time of negative ideological and political public opinion.

5.2.4. State Changes in Cellular Evolution. As the changing number of iterations, various state change curves of the subjects of cyber opinion are as shown in Figure 6. It can be seen from Figure 6 that at the beginning of cyber opinion propagation, the number of positive, neutral, and negative subjects is almost the same. With the increasing number of iterations, each state has evolved accordingly and the number of people with negative attitudes has increased significantly, while the number of people in favor of opinions has decreased sharply and finally reaches the phenomenon of homogenization.

5.2.5. Response Time and Accuracy of Negative Ideological and Political Public Opinion. In order to verify the effectiveness of the proposed propagation model, three baselines are chosen for comparison, which are SN-SEIR [17], MI-SEIR [18], and DI-SCIR [19]. SN-SEIR is a Susceptible-Exposed-Infectious-Recovered (SEIR)-based public opinion propagation model on social networks MI-SEIR is an SEIR-based media and interpersonal relationship propagation model, and DI-SCIR is a Direct Immune-Susceptible-Contacted-Infected-Refractory public opinion propagation model. As can be seen from Figure 7, with the

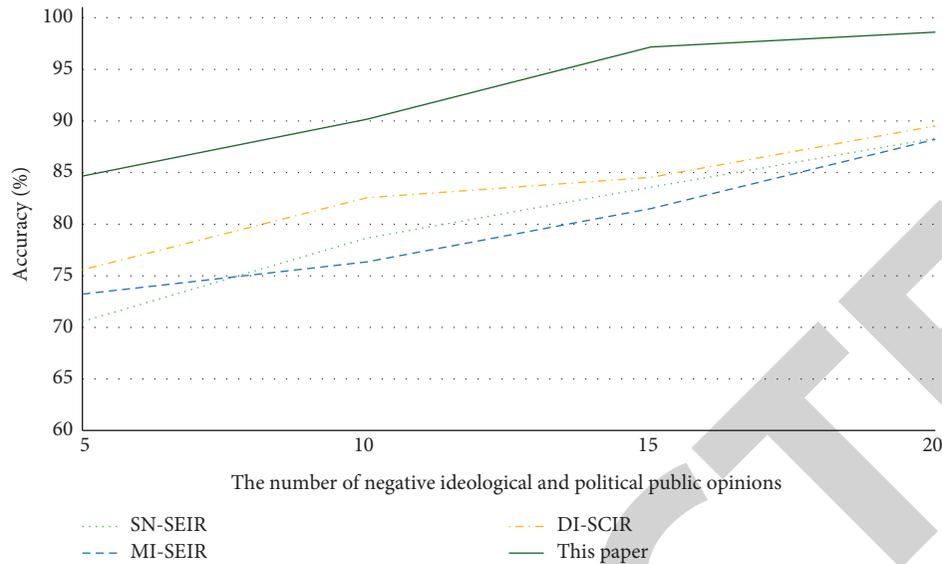


FIGURE 8: Accuracy of negative ideological and political public opinion.

increasing number of negative ideological and political public opinions, the proposed CA-based safety public opinion propagation model of undergraduates' ideological and political security has good performance in response time. With the increasing number of negative ideological and political public opinions, the response time of the proposed propagation model is nearly the same. While the response time of the DI-SCIR model is almost ten times bigger than that of the proposed propagation model at 20 negative ideological and political public opinions, it can also be seen from Figure 7 that the proposed propagation models can ensure the safety of ideological and political public opinion propagation model with less response time. Moreover, the accuracy of the CA-based safety public opinion propagation model of undergraduates' ideological and political security is performed. As can be seen in Figure 8, with the increasing number of negative ideological and political public opinions, the accuracy of the proposed model in this paper is always the highest, indicating the good performance of the proposed CA-based safety public opinion propagation model.

6. Conclusion

Cyber opinion propagation is an evolutionary process of the social complex system, and its formation process is comprehensively affected by many factors. In order to more accurately describe the safety of public opinion of undergraduates' ideological and political security, aiming at the shortcomings of the traditional CA model, the stochastic immune mechanism model is proposed. Then, a CA-based stochastic immune mechanism model is adopted to ensure the safety of undergraduates' ideological and political public opinion. The experimental results show that the proposed propagation model can ensure the safety of the proposed propagation model of undergraduates' ideological and political public opinion.

There are some differences between the simulation and the actual network environment, and the real data can be used to verify the model in future research. In addition, the propagation model of undergraduates' ideological and political public opinions should be studied under the four network topologies of nearest-neighbor coupled networks and Watts–Strogatz networks.

Data Availability

All data used to support the findings of the study are included within this paper.

Conflicts of Interest

The author declares no conflicts of interest in this paper.

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