

# Yimo (Harry) Deng

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Northeastern University, Hunnan District 110167, Shenyang, China

## EDUCATION

**Northeastern University (985 & 211)** *B.E.* *Sept 2020 - June 2024 (Expected)*  
*Information Security* *Shenyang, China*  
*Average Score: 90.1/100; GPA: 3.9/4.0;*  
*Major Courses: Advanced Mathematics (Calculus), Linear Algebra, Probability Theory and Mathematical Statistics, Discrete Mathematics, Mathematics for Information Security (Number Theory), Game Theory, Computer Networks, Principles of Computer Organization, The Principle and Security of Operating system, Data Structures and Algorithm Analysis, Machine Learning and Big Data Mining, Fundamentals of Cryptography, Linux Programming, etc.*

## TECHNICAL SKILLS

**Programming:** Python, C/C++, Java, Matlab, etc.  
**Software & Tools:** PyTorch, Android, JavaFx, Qt, MFC, Office, L<sup>A</sup>T<sub>E</sub>X, etc.

## RESEARCH EXPERIENCE

**Security and Privacy in Distributed Machine Learning for Vehicular Ad hoc Networks** | Mitacs Globalink  
*Mar 2023- Sept 2023*  
*Supervised by Prof. Jianping Pan(FIEEE)* *UVic, Canada*  
- Design a secure and privacy-focused distributed machine learning framework for vehicular ad hoc networks (VANETs).  
- Protect the location privacy of smart device holders in VANETs, and manage malicious nodes within the system.  
- **Results:** Wrote one conference article as a co-author.

**An Economic Study of Cooperative Resource Provision in JointCloud Computing**  
*May 2023 - Jul 2023*  
*Supervised by Prof. Wingfei Tsang* *NEU, China*  
- Determined the influence of different types of cloud customers on CSP decision-making through statistical analysis of Alibaba PAI cluster's data.  
- Employed an evolutionary game model to analyze JCC from an economic perspective, revealing the dynamic and stable relationships between multiple CSPs and a large number of users.  
- **Results:** Publish one journal article as the first author (prepared for submission to the IEEE TSC).

**Intrusion Detection System Based on Voltage Fingerprint in In-Vehicle Network CAN Bus Network**  
*Jun 2022 - Oct 2022*  
*Supervised by Prof. Jian Xu* *NEU, China*  
- Designed an IDS by identifying differences in voltage sample features collected from the CAN bus.  
- **Effectiveness:** Addressed the issue of traditional CAN-based message rule and anomaly behavior learning IDS being unable to locate the source of attacks. Reduced the voltage sampling rate of the IDS to 50K samples per second.  
- **Results:** Built a fully functional detection system and won a national competition award.

**Implicit Unemployment Problem from the Perspective of the Tripartite Evolutionary Game**  
*Feb 2022 - May 2022*  
*Supervised by Prof. Wingfei Tsang* *NEU, China*  
- Proposed a model to investigate the game-theoretic behavior of three key stakeholders in a pandemic environment.  
- Analyzed the underlying causes for forming Evolutionarily Stable Strategies (ESS) under various scenarios.  
- **Effectiveness:** Incorporated tripartite evolutionary game theory into analyzing public health events.  
- **Results:** Independently completed a social management research paper.

**Diagnosis of Fundus Diseases Based on Convolutional Neural Network**  
*Aug 2021 - Jan 2022* *XDU, China*  
- Performed experiments on several retinal image recognition algorithms.  
- Assessed the efficacy of each method in accurately detecting various eye diseases.  
- **Effectiveness:** The classification accuracy of retinal diseases was improved by 5.67%.  
- **Results:** Developed a fundus image-assisted diagnostic system employing a sophisticated machine learning algorithm, subsequently securing an accolade in a national competition.

## WORK & TEACH EXPERIENCE

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**Research Assistant** | *Information Hub, HKUST*

*Sept 2023 - Present*

*Supervised by Prof. Huangxun Chen*

*HKUST, China*

- Exploring security issues in the application of large language models in specialized domains.
- Currently researching backdoor attacks in large language models integrated with computer vision.

**Guest Speaker** | *Software College, NEU*

*Mar 2023*

- Game Theory, Evolutionary Game Theory, Spring 2023

**Java Development Engineer (Intern)** | *NEUTech, NEUSoft*

*May 2021 - Aug 2021*

- Developed an information management system with a GUI for a senior care center independently.

## COMPETITION AWARDS

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**International Meritorious Winner** | Mathematical Contest in Modeling

*May 2023*

**International Honorable Mention** | Interdisciplinary Contest in Modeling

*May 2022*

**National Third Prize** | National College Student Information Security Competition

*Sept 2022*

**National Third Prize** | National E-commerce Innovation Competition for College Students

*Jun 2022*

**International Third Prize** | Asia-Pacific Mathematical Contest in Modeling for College Students

*Jan 2022*

**Regional third prize** | C4-Network Technology Challenge

*Aug 2022*

**Provincial Second Prize** | China International Internet+ Innovation and Entrepreneurship Competition

*Jul 2022*

## CERTIFICATES AND HONORS

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Huawei Scholarship (Only three winners in NEU)

*2021-2022*

Northeastern University Scholarship

*2021-2022*

Outstanding Student

*2021-2022*

Yipu Science and Technology Scholarship

*2020-2021*

Northeastern University Scholarship

*2020-2021*

Outstanding Student Leader Model

*2020-2021*

## OTHER EXPERIENCE

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**President** of the **Student Union**, College of Software, Northeastern University

**The Best College Host** in Northeastern University at the academic year 2020-2021

**Leader** of 2021 Summer Vacation Research Team on Rural Vitalization