

# Jiaqi Deng

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Xili University Town, Shenzhen City, Guangdong Province, China 518071

## EDUCATION

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| Bachelor of Computer Science, Harbin Institute of Technology, Shenzhen | 09/2020-present |
| Major GPA: 87.4/100 or 3.7/4   |                 |

## RESEARCH EXPERIENCES

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| <i>Application of Federated Learning in new power electricity system</i> | 10/2022-12/2022 |
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- Complete the data processing
- Wrote the program model code needed for the project.
- Wrote part of the paper.

Project description: To preserve the privacy of users' electricity consumption data, we applied a federated learning technique to keep the data from leaving the device while letting these privacy data contribute to building the model of electricity consumption prediction.

Research task: Use Kaggle datasets to build the BiLSTM model and simulate the condition that there are 112 clients and one main server. The main work contains configuring parameters like the proportion of clients each round, local epochs, learning rate, and so on. Finally, we offered the prediction plan with relatively high accuracy using the federated learning strategy and RSA-AES to preserve user privacy. The project was completed based on the PyTorch framework and the Kaggle dataset.

### *Analysis of Genome Evolution of COVID-19*

11/2022-1/2023

Project description: Privacy computing, in a broad sense, refers to computing systems and technologies that protect privacy information, including but not limited to technologies such as Federated Learning (FL), Trusted Execution Environment (TEE), Secure Multiparty Computation (MPC), Homomorphic Encryption (HE), etc. These technologies can analyze, process, and verify data without leaking original data, including the entire information processing process such as data production, storage, computation, and application. The use of privacy computing technology can fully connect data sources, break through data analysis barriers, improve data utilization, promote multi-center cooperation and sharing, and facilitate achievement transformation.

Research Task: Use MPC and python MPyC package to calculate the distance of two provided genes without leaking the gene data.

### *Research and Implementation of Privileged Account Management Plug-in Technology for Container Cloud and DevOps Scenario*

10/2020-Present

- Discussed and developed a project plan with project partners
- Wrote the program code needed for the project.

Project description: The use of privileged accounts in container cloud scenarios and DevOps scenarios is a typical computer-to-computer interaction scenario. This project designs a privileged account management plug-in for computer-to-computer interaction in general scenarios based on the study of the usage scenarios of PaaS, container cloud, and DevOps toolchain privileged accounts.

Research task: By using the PAM server and checking out the credentials for the service account, the application does not need to store the credentials in the configuration file or hard-code them in code beforehand. The PAM server regularly performs key rotation, log auditing, and other measures to further improve security.

## PROFESSIONAL SKILLS

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- Familiar with C, swift, python, PyTorch, and latex writing
- Got full marks in Probability Theory Mathematical Statistics and Linear Algebra and Analytic Geometry and Computational Methods.
- Specialty: Playing guzheng, playing guitar, dancing.
- Interests: Reading, watching movies, fitness, swimming.
- Language skills: Chinese (Native); English (CET-6).

## EXTRACURRICULAR EXPERIENCES

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*The participants in the Volunteer activity of Shenzhen Computing Society* 03/2020

*Blood donation volunteers in Blood donation public welfare activities* 12/2020

*Vice Minister of Propaganda Department in Student Union of School of Computer Science and Technology, Harbin Institute of Technology, Shenzhen* 01/2021-Present

- Rehearsed for the school's New Year's Day party;
- Wrote and published the tweet on the school's official account;
- Assisted in organizing and participating in online preview promotion activities.