Jiaqi Deng

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

EDUCATION

Bachelor of Computer Science, Harbin Institute of Technology, Shenzhen 09/2020-present

Major GPA: 87.4/100 or 3.7/4

RESEARCH EXPERIENCES

Application of Federated Learning in new power electricity system 10/2022-12/2022

- Complete the data processing
- Wrote the program model code needed for the project.
- Contributed to writing part of the paper.
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Code and Paper Link

Project description: Used federated learning to preserve the privacy of users' electricity consumption data while building a model for electricity consumption prediction.

Research task: Built a BiLSTM model using Kaggle datasets, simulating the condition of 112 clients and one main server. Configured parameters like the proportion of clients each round, local epochs, and learning rate. Offered a prediction plan with relatively high accuracy using the federated learning strategy and RSA-AES to preserve user privacy. Completed the project based on the PyTorch framework and the Kaggle dataset.

Privacy-Preserving Recommendation based on Shuffled Federated Graph Neural Network.

Project description: Use GNN and Federated learning to achieve the social media recommendation function.

Code Link here

Analysis of Genome Evolution of COVID-19 11/2022-1/2023

Code and other information: Code LInk

Project description: Conducted privacy computing analysis of genome evolution of COVID-19 using technologies such as Federated Learning (FL), Trusted Execution Environment (TEE), Secure Multiparty Computation (MPC), Homomorphic Encryption (HE), etc. 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: Used 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 10/2020-10/2021

- 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.

COURSE PROJECTS

- Computer System: xv6Labs
- Database :databaseLabs
- Ai_Lab: ai search strategy for pacman_game
- Computer Network: write a simple version of the whole set of internet protocol

PROFESSIONAL SKILLS

- Programming: C, Swift, Python, PyTorch, and LaTeX writing
- Strong foundation in Probability Theory Mathematical Statistics, Linear Algebra and Analytic Geometry, and Computational Methods.
- Language skills: Chinese (Native); English (CET-6).

EXTRACURRICULAR EXPERIENCES

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.