JINQI LU

Master's Student

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RESEARCH INTERESTS

I have a deep passion for a wide range of cutting-edge computer technologies, including Database & Storage Systems, Cloud Computing, Networks, Machine Learning, Distributed Systems, Virtualization, and Big Data Applications. I'm motivated to explore deeper into new concepts, with a keen focus on their practical applications in real-world scenarios. I'm also eager to get involved in interdisciplinary areas such as bioinformatics, where I can acquire practical knowledge while collaborating with researchers from various backgrounds.

EDUCATION

M.Sc. in Computer Science — Expected Jan 2024
Boston University — Boston, MA, USA

B.A. in Computer Science — May 2022
Boston University — Boston, MA, USA

PUBLICATIONS

1. Xue J, Chen H, **Lu J**, Zhang H, Geng J, He P and Lu X (2023), **Identification of immunity-related lncRNAs and construction of a ceRNA network of potential prognostic biomarkers in acutemyeloid leukemia**. Front. Genet. 14:1203345. doi: 10.3389/fgene.2023.1203345

RESEARCH EXPERIENCE

Boston University Department of Computer Science| Boston, MA, USA — Feb 2023 – Present
Graduate Research Assistant
Advisor: Professor Manos Athanassoulis

- Participate in various research tasks and are responsible for updating the lab's (MiDAS and DiSC) websites.
- In the relational memory project, responsible for deploying softcore & Linux on FPGA boards, customizing ISA instructions, and running experiments.

Beijing Institute of Genomics Chinese Academy of Sciences | Haidian, Beijing, China — Jun 2023 – Present
Research Assistant Intern

- Work remotely (during the semester) and on-site (during vacation).
- Participating in various research projects. Constructing dynamic websites using Java, building databases using MySQL, and processing data using Python.

PROFESSIONAL EXPERIENCE

Beijing JingYouQiKang Science & Technology Co., Ltd | Haidian, Beijing, China — Jun 2020 – Sep 2022
Software & Server Cluster Engineer Part-time

- Configured & deployed physical servers, virtual machines, hypervisors, network equipment, and disk arrays.
- Developed software and scripts to automate workflow for different projects.

Beijing JingYouQiKang Science & Technology Co., Ltd | Haidian, Beijing, China — Jun 2018 - Present
Database & Network Administrator Part-time

- Design the 40G LAN infrastructure and configure switches & access points, manage RDMA/RoCE policies.
- Design database structure, setup and maintain MariaDB database for various projects.

LEADERSHIP & TEACHING EXPERIENCE

Boston University Department of Computer Science| Boston, MA, USA Jan 2022 – May 2022
Teaching Assistant (CS 105 Intro to Database and Data Mining)

- Mainly responsible for teaching-related tasks.
- Conducting lab sessions and holding office hours, overseeing quizzes and exams, setting up and assessing homework, and addressing questions.

Boston University Department of Computer Science| Boston, MA, USA Jan 2023 – May 2023
Teaching Assistant (CS 460 Database Systems)

- Mainly responsible for grading-related tasks.
- Answering questions, creating rubrics, grading assignments, exams, and presentations.

Boston University Department of Computer Science| Boston, MA, USA Sep 2023 – Present
Teaching Assistant (CS 392 Programming in C#)

- Mainly responsible for all non-teaching tasks (include grading).
- Creating rubrics, grading assignments, exams, and presentations.
- Answering questions on Piazza and managing submissions on Blackboard.

FEATURED PROJECTS

Genetic Analysis Research Pipeline Jun 2020 – Present
Beijing JingYouQiKang Science & Technology Co., Ltd Haidian, Beijing, China

- Analysis of differences in gene expressions of different species when applying different treatments. This project analyzes SRA data (~2000TB) from the NCBI database and processes it with our own analysis pipeline.
- Estimated resource requirements, selected & installed server platform, and configured network equipment.
- Developed Python program bundle to automate the entire analysis process, task includes data downloading, integrity checking, firewall circumventing, file analysis, result collection & validation, and source data archiving.
- Designed the data-acquiring architecture to download data from NCBI's public database without interruption.

Building My Own Data Center May 2022 – Aug 2023

- I built my own data center from the ground. I have conducted searches on my own and applied learned knowledge in the real world.
- Task completed: crafting the interior layout, implementing an eco-friendly cooling and ventilation solution, engineering an efficient power distribution system, establishing robust security measures, setting up a high-speed 40G network, devising a hybrid storage solution, and deploying optimized hypervisors and data servers.

EXTRACURRICULAR ACTIVITIES

Self-Hosting Services Jan 2015 – Present
In my free time, I like to research new technologies on my own and turn them into actual applications. I started to self-host my Minecraft server in high school based on my own server hardware. This later expanded to a much larger set of services. Some featured examples are:

- Set up my own email server, and hosted a web interface using Roundcube.
- Hosted my own websites, cloud drive, GitLab codebase, and status page for all services & servers.
- Configured my own root Certificate Authority and intermediate Certificate Authorities.
- Microsoft Active Directory cluster.

Honors and Awards

Dean's List Jan 2022
Boston University

Dean's List May 2020
Boston University

VOLUNTEER EXPERIENCE

Registration & General Help Oct 2023
ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAMMO) Boston, MA, USA

- Helped conference participants during the check-in process.
- Distributed nametags, marked their arrival, and provided general help.

OTHER PROJECTS

Predicting COVID-19 Trend Jan 2021 – May 2021
Boston University Boston, MA, USA

- Using publicly available datasets, predicting the number of COVID cases in different areas in the near future using Machine Learning Models like Linear & Logistic Regression, Random Forest, KNN, and Naïve Bayes.
- Program developed using Python and SK-Learn.

COVID-19 Classification Sep 2021 – Jan 2022
Boston University Boston, MA, USA

- Using publicly available datasets, training deep learning models like VGG16 or AlexNet to classify different X-ray images into four classes: normal, COVID-19, Pneumonia-Bacterial, and Pneumonia-Viral.
- Program developed using Python, TensorFlow, and PyTorch.

Tweets Sentiment Analysis Jan 2022 – May 2022
Boston University Boston, MA, USA

- Using Twitter API, collecting thousands of tweets.
- Apply and tune models like BERT, LSTM, Naïve Bayes, or Logistic Regression.
- Preprocess data, steps including: stop words and punctuation removal, lowering text, stemming, lemmatization, and tokenization.
- Program developed using Python, Spacy, TensorFlow, SK-Learn, and PyTorch.

Building Chatbot Jan 2023 – May 2023
Boston University Boston, MA, USA

- Build an interactive chatbot for different scenarios.
- Create the training data, service backend, select and tune the model.
- Program developed using Python, RASA, TensorFlow, and PyTorch.

SKILLS

***Programming Languages*:** Python, Java, C, C#, C++, HTML, CSS, SQL.
***Software Toolsets*:** Word, Excel, Visio, PowerPoint, G-Suite, Photoshop, Premiere Pro, After Effects, and Vivado.
***Technical*:** Nginx, Apache, MySQL/MariaDB, TensorFlow, PyTorch, WordPress, Microsoft Active Directory.
***Operating* System:** CentOS, Debian, Ubuntu, VMware vSphere 6.7+, Microsoft Windows, Mac OS, Arista EOS.