Mingli Zhang

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Education

University of North Carolina at Chapel Hill *North Carolina, USA*
BSMS in Computer Science | BS in Mathematics *Aug 2018 - May 2022(BS) - Aug 2023(MS)*
- **Undergraduate GPA: 3.8/4.0**, Dean's List from 2018-2023
- **Courses:** Advanced Operating System, Advanced Machine Learning, Digital logic, Algorithms and Analysis, Database, and Modern Web Dev
- **Research:** Information Retrieval and Data Visualization (Undergraduate); Algorithm Visualization, and Key-Value Store Research (Master's).

University Projects

Fake News Detection *North Carolina, USA*
UNC - Chapel Hill *Oct 2020 - Nov 2020*
- Experimented with different classification models with three other teammates using the python library **scikit-learn**. The models tested were **logistic regression**, **Naive Bayes**, **support vector machine**, and **bi-directional LSTM recurrent neural network**.
- Created graphs and charts using **seaborn** and **pyplot** to visualize the correctness outcome of different models.
- We concluded that all four models produced accuracy above 93%, while LSTM has the highest accuracy, it is much more expensive computationaly.

One Pixel Attack Defense *North Carolina, USA*
UNC - Chapel Hill *Aug 2022 - Dec 2022*
- Research on a special adversarial attack called the **one-pixel attack** on image recognition **CNN networks** and how to defend against it using different pre-processing techniques.
- Led a team of **5** other classmates in researching potential solutions and testing out how successful one-pixel attack can be on CNN networks.
- Implemented **seam carving** using **dynamic programming** for a better pre-process resizing operation.
- The project was only partially successful as we only had limited processing power.

Work Experience

Cutco/ChampionPDI *Chapel Hill, UNC*
Tech Lead / Product Manager *Jan 2023 - Present*
- Led a team of 6 undergraduate developers to create a sales representative management platform that received **200+ users** from the first launch week.
- Designed the project to use the **serverless** approach for faster development lifecycles and lower learning curve.
- Used **HTML**, **CSS**, **VanillaJS**, and **WebPack** for the web front end, and **Firebase** to manage hosting, authentication, and a NoSQL database.
- Transitioned to using **React** for the front end after the initial release for a faster user experience.
- Introduced the release management process for better collaboration and created automated deployment using **Github Actions**.
- Held weekly scrum meetings and code reviews to ensure all team members were transparent with their tasks and could deliver on time. Also held **tech talks** to introduce new technologies and tools for faster development process.

Cymantix *North Carolina (hybrid), USA*
Software Engineer *Oct 2021 - Feb 2023*
- Engineered, with a team of five developers, a **full-stack SaaS machine-learning driven platform** that integrated a WebRTC video conferencing app, an information retrieval app, and a core identity API. The platform played a crucial role in the company securing seed-round funding.
- Explored with researchers and developers on the team to replace the **K-Means** algorithm with **Hierarchical clustering** to reduce redundant computation overhead.
- Incorporated **Microsoft Azure** into our platform per our client's request, providing more flexible login choices and enabling seamless secured data transfer between our data retrieval app and Microsoft's cloud storage.
- Parallelize our data retrieval platform's real-time news analysis process using **ThreadPoolExecutor** and **Socket.io**, leading to a **90%** acceleration.
- Strengthened our critical data update pipeline using **bash script**, **python**, and **CronJob**, increasing reliability and ensuring our Pubmed data is always up to date.

IBM *North Carolina (remote), USA*
Full Stack Developer Intern *May 2021 - Aug 2021*
- Improved user experience on a development environment management platform that supports **2000+** IBM developers each month. The improvements are based on user feedback to provide a more intuitive experience.
- Learned **NextJS**, **SailsJS**, and **MongoDB** in a week and started contributing to the code base independently after two weeks.
- Streamlined administrative content activities to reduce workload for developers, resulting in faster content updates and **20+** fewer required redeployments per week.
- Founded an automated validation service with a fellow intern using Sails.js that simplifies maintaining the employee database, reducing **3 months** worth of manual operations each year.
- Collaborated closely with all other team members, including the product manager, other developers, my mentor, and the UI/UX design engineer.

Skills

Programming	Python (Pandas, TensorFlow, NumPy, Scikit-learn. etc.), C/C++, HTML/CSS, JavaScript, SQL, Java
Miscellaneous	Linux, Shell (Bash/Zsh), LaTeX, Tableau, Microsoft Azure, Firebase, Next/React, React Native, Flask, JQuery, CronJob, Elasticsearch
Languages	English (Professional Proficiency), Mandarin (Native Proficiency)