Yanzheng (Dexter) Wu

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EDUCATION

TUFTS UNIVERISTY, Medford, MA — Expected Graduation: Dec 2023
Master of Science, Computer Science

BOSTON UNIVERSITY, Boston, MA — Sep 2019 – May 2022
Bachelor of Arts, Computer Science; Minor in Statistics(Dean's List, Fall 2021, Spring 2020, Spring 2022)

EXPERIENCE

Full-Stack Software Engineer, SmartRead, WAKE FOREST CS FELLOWSHIP, Winston-Salem, NC — Jan 2023 – March 2023

- **Full-Stack Development**: Engineered and launched a web extension "SmartRead". With **Java**, **HTML, JavaScript**, **React.js**, and **Node.js**, we facilitated users' reading with a seamless interface where they could effortlessly copy-paste content and leverage one-click functionalities for AI analysis and summary.
- **Agile Development & Deployment**: Integrated with OpenAI's **GPT-3 API** and **Google Manifest V3**. Shipped using **Heroku**.
- **Recognition**: **1st place** in the 2023-2024 Wake CS Pitch competition, securing $2,500 initial funding and mentorship.

Data Analyst, BOSTON CHINATOWN NEIGHBORHOOD CENTER (BCNC), Boston, MA — Feb 2022 – Jun 2022

- **Advanced Analytics & GCS**: Employed **Pandas**, **Apache Spark**, **Google Cloud**, and **IPUMS** to meticulously process and dissect the 2022 census data, spotlighting socio-economic disparities within Boston's Asian demographic.
- **Pipeline Development**: Orchestrated a robust data pipeline using **Jupyter Notebook**, integrating 8 years of census data with sophisticated normalization techniques through the **SciPy** Module, honing in on pivotal poverty metrics.
- **Impact**: Achieved a breakthrough, with at least an 80% enhancement in pinpointing and addressing poverty challenges, facilitating targeted community initiatives.

Research Assistant Python (In Semester), TUFTS UNIVERSITY, Medford, MA — Jul 2022 – Dec 2022

- **AI & RL Design**: With Professor Dr. Jivko Sinapov, engineered an advanced Deep **Q-Learning Reinforcement model** integrating dual policy and target CNN architectures, complemented by a prioritized **experience replay buffer**, leveraging the power of open-source frameworks **PyTorch** and **Gymnasium**.
- **Performance**: This pivotal research has provided a profound understanding of the capabilities of DQN models in reinforcement learning environments, potentially influencing future advancements in Q-learning based algorithms.

Backend Database Engineer Intern, TENCENT, ShenZhen, China — Jul 2020 – Sep 2020

- **Data Integration**: Leveraged **Python** and **PostgreSQL** to perform ETL processes, enhancing customer retention analytics. Improved existing SQL queries, resulting in a 7% increase in legacy database framework efficiency.
- **Machine Learning**: Implemented **TensorFlow**-driven Probabilistic models to predict and optimize database performance. Proactively adjusted indexing, leading to on average 4ms boost in database system response time.
- **API Creation & Management**: Implemented **RESTful API** and cross-database functionalities.
- **Recognition**: Honored with the "Valuable Intern" Award for outstanding contributions, playing a significant role in the team's collective effort that led to a 20% efficiency increase in the Cloud Product Services department's projects.

PROJECTS

Constructing Temporal Spatial Graph Database from Tabular Datasets, **Software/Data Engineer**, MA — 2023

- **Data Pipeline & Graph Theory & Engineering:** Constructed a data pipeline with **Pandas**, **MySQL**, and **NetworkX** to morph Boston highway traffic data into time-sensitive graphs. Integrated **Google Map API** for real-time highway locations, devised top-K proximity algorithm for mapping graph vertices. Validated the dataset using a **Temporal Graph Network (TGN)** model in **PyTorch**, achieving a consistent reduction in mean square errors.

Deep Learning Model for X-ray Image Classification, **AI Engineer/Front-End Developer**, MA — 2022

- **Computer Vision:** Developed two models using the **Xception** and **MobileNet V2** architectures. Attaining an 84% accuracy rate in classifying chest X-rays into four unique Covid diagnosis categories.
- **Model Deployment & User Interface:** Deployed the trained **CNN** model via **Flask** and **Pickle** modules, enabling users to effortlessly upload and diagnose their X-ray images for Covid on a dedicated webpage.

Instagram Functionality Simulation, **Full-Stack Developer**, MA — 2021

- **Web Development & Simulation:** Crafted a simulation of Instagram's photo posting and liking system using **Flask**, **Python**, **HTML**, and **CSS3**. Structured the app using **MySQL** for database operations and defined the schema to handle user interactions.

Additional Skills

Hadoop, Google Big Query, Git, Postman, Microsoft Office, Visual Studio Code, Latex, RStudio, Windows, MacOS, Linux