# YUFAN ZHANG

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## EDUCATION

**Cornell Tech (Cornell University),** New York, NY May 2025
***Master of Science in Information Systems – Connective Media Concentration***
Relevant Coursework: Machine Learning Engineering, Applied Machine Learning

**Duke Kunshan University / Duke University Dual Degree Program,** Kunshan, China May 2023
***Bachelor of Science in Data Science*** | GPA: 3.7/4.0
Relevant Coursework: Cloud Computing, Principles of Machine Learning, Algorithms and Databases

## TECHNICAL SKILLS

**Coding Languages:** Python, Java, HTML/CSS/JavaScript, SQL
**Web Development:** React.js, Express.js, Node.js, Django, MongoDB, MySQL, Socket.io
**Data Science & Machine Learning:** Pandas, NumPy, Scikit-Learn, PyTorch, TensorFlow Extended

## EXPERIENCE

**eBay Inc., Product Manager, Internship (Cloud Data & Storage)**, Shanghai, China Mar 2023 – Jun 2023

- Facilitated successful migration of **3 high-impact data messaging** use cases to a new messaging platform with enhanced **HA/DR** capabilities by orchestrating user meetings, evaluating dependency requirements, and partnering with the engineering team
- Boosted customer adoption of the new data governance platform, Data Lake, by **24%** by leveraging **customized MkDocs** to maintain detailed product **documentation**, including user guides, API documentation, and technical specifications
- Organized BrownBag session that elevated customer awareness of the new **SQL-as-Stream** feature, resulting in **10 new onboardings**

**Duke Kunshan University, Research Assistant (Data Science Research Center)**, Kunshan, China Jan 2022 – Sep 2022

- Reduced data preprocessing time by **90%** and accelerated research iterations **3x** by architecting a data pipeline for querying Ethereum data and constructing real-time transaction graphs, utilizing **BigQuery on Kaggle, Ethereum ETL, and Raphtory**
- Developed a research framework for cross-sectional comparison of decentralization levels in DeFi protocols by conducting statistical and social network analysis with **Python** (**NetworkX, Pandas, Plotly**) on over **2 million** transaction records from 6 DeFi protocols
- Publish a research paper [Link] as the **first author** on **2023 Computing Conference**, which has been cited in at least **3 papers**

## PROJECTS

**miniTorch**, (Python) Fall 2023
Python re-implementation of the Torch API [GitHub]

- Spearheaded the development of a **Python** re-implementation of PyTorch, achieving 100% compatibility with native PyTorch code
- Orchestrated a remarkable **70%** acceleration in tensor operations on CPUs by integrating parallelization with Numba JIT, and a **150%** boost on GPUs through the implementation of **CUDA Matrix Multiplication**
- Committed to software engineering practices, including code styling with **black** and **flake8**, comprehensive testing with **pytest**

**Semantic Segmentation Pipeline**, (TensorFlow Extended) Fall 2023
Machine learning (ML) pipeline for semantic segmentation using TensorFlow Extended (TFX)

- Engineered a **Kubeflow** runner to seamlessly coordinate and deploy the ML pipeline across Kubernetes clusters, resulting in an agile and resource-efficient model training and serving infrastructure
- Crafted custom TFX components, including the **HFPusher**, meticulously tailoring the pipeline to meet project-specific demands and augmenting the capabilities of the standard TFX library
- Demonstrated performance enhancements, yielding a **43%** increase in segmentation accuracy compared to baseline models

**GenieChat**, (Next.js, Socket.io, Tailwind CSS, Express.js) Summer 2023
Full-stack WhatsApp clone with ChatGPT API Integration [GitHub]

- Developed a real-time chat application using **Next.js** for the frontend and **Node.js** for the backend, utilizing **socket.io** for real-time bi-directional communication between the server and the client, **ZegoCloud** for real-time audio and video communication
- Enhanced loading performance by implementing **lazy loading**, resulting in a remarkable **65%** reduction in file bundle sizes
- Engineered secure and user-friendly login functionality, enabling authentication through Google and GitHub via **Firebase**

**MF-Net**, (PyTorch) Summer 2022
GAN-based generative deep learning model for stylized font design [GitHub] [Paper]

- Developed an end-to-end GAN-based model with **PyTorch** for generating font images in arbitrary styles from reference images
- Conducted rigorous benchmarking of the model against SOTA baselines on 858 stylized fonts, demonstrating a **17.3%** SSIM improvement in image distance, a **27.4%** mFID improvement in feature distance, and a **16.7%** improvement in user evaluation
- Published a paper as the **first author** on this project on **ACM Multimedia 2022**, which has been cited in at least **2 subsequent papers**