Chang Zeng

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EDUCATION

University of Massachusetts Amherst **Amherst, MA, 2018 - Present**
Ph.D. in Computer Science **4.000 GPA**
Mater of Science, Major in Computer Science, Bays State Fellow **3.895 GPA**
Bachelor of Science, Major in Computer Science; Major in Environmental Science **3.832 GPA**

AWARDS

- **Bay State Fellowship** at the University of Massachusetts Amherst.
- **Dean's List** recipient for the following semesters: Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, and Spring 2022 at the University of Massachusetts Amherst.

TECHNICAL SKILL

- **Programming Languages**: Python, Go, C#, HTML, CSS, XAML, TypeScript, JavaScript, C++
- **Library & Framework**: TensorFlow, PyTorch, NumPy, Pandas, Docker, OpenCV
- **Tools:** Git, Kubernetes, Docker, Kubernetes, AWS S3, Bash, Conda, Unix/Linux, Node.js, PostgreSQL

PUBLICATION

- **Cyrus, C. Chang, Z. and Yair, Z. "Human-AI Cooperation for Personalized Fairness Elicitation." Work in Progress.**

RESEARCH EXPERIENCE

Fairness Elicitation **Amherst, MA**
Research Assistant (**Optimization, Algorithm, Fairness Division**) **Sep 2022 - Present**

- Modeled human and AI decision-making processes by analyzing the behavior of the **Weighted Generalized Means** class in real-world scenarios involving multiple stakeholders.
- Created flexible, robust distance **metrics** to quantify **fairness disparities** by comparing utility and disutility outcomes among diverse stakeholder groups.
- Conducted **minimax complexity analysis** to evaluate the efficiency of the designed algorithm for **proper and improper epsilon-elicitation** of fairness concepts.

WORK EXPERIENCE

X-Camp Tech Team Intern **Remote, US**
Software Engineer (**Go, Git, Test&Debug, CI/CD, Kubernetes, Docker**) **Jun 2023 - Aug 2024**

- Designed and developed a **scalable architecture** using **Golang** to seamlessly integrate Zoom API functionalities into existing systems, resulting in improved teaching and learning experience.
- Utilized an automated **CI/CD** workflow for building and deploying to a remote **Kubernetes** cluster, facilitating seamless service scaling and management in a **containerized** environment.

PROJECT EXPERIENCE

Wuhuu Information Sharing Platform **Amherst, MA**

Software Engineer (**Python, Crawler, AWS S3**) **Sep 2022 - Oct 2023**

- Developed customized **crawlers** utilizing Python to systematically gather data from social platforms, focusing on user engagement trends, content popularity, and sentiment analysis.
- Implemented a robust storage infrastructure using **AWS S3** to securely store and retrieve shared files, while optimizing data retrieval and minimizing latency.

Autoencoder Optimization **Amherst, MA**

Software Engineer (**Python, Deep Learning, MLP, CNN, RNN**) **Sep 2022 - Dec 2022**

- Built an **autoencoder** using backpropagation to denoise electrocardiogram signals, significantly improving signal quality and diagnostic accuracy.
- Performed a comprehensive comparison between linear and non-linear structures, including **CNN** and **RNN**, to evaluate their performance in optimizing the denoising process.
- Employed academic research methodologies to methodically **fine-tune** autoencoder model parameters, incorporating strategies like **scheduled learning rate** adjustments and varied layer structures, resulting in elevated denoising capabilities and heightened accuracy.

Facial Activity Tracking **Amherst, MA**

Software Engineer - Full-Stack (**Python, Machine Learning, OpenCV, CUDA**) **Jan 2022 - May 2022**

- Utilized **BERT transformer** (**TensorFlow**) along with **sampling methods** such as random forests and stratified cross-validation to accurately classify facial behavior patterns.
- Utilized **OpenCV** libraries to capture and process live camera feed in real-time, extracting relevant features from the eye images, such as pupil dilation and eye movement, to analyze and determine the user's eye activity.