Tingfeng Xia

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Education

University of California, Los Angeles (UCLA), Los Angeles, CA *Sep 2021 – Jun 2023*
Master of Science in Computer Science Candidate
Coursework: Machine Learning, Big Data Systems, Advanced Data Mining

University of Toronto, Toronto, ON *Sep 2017 – Jun 2021*
Honours Bachelor of Science in Computer Science, Minor in Statistics *GPA: 3.93/4.00*
Track: Computer Science Specialist, Focus in Artificial Intelligence
Coursework: Operating Systems, Data Structures, Complexity, Machine Learning, Statistical Learning, Architecture
Honors: High Distinction, Dean's List, New College Scholarship

Technical Strength

Programming Language: Python, C/C++, Objective-C/C++, Java, Javascript, Julia, R, Hack, Matlab, Verilog
Frameworks: PyTorch, JAX, TensorFlow, NumPy, OpenCV, React, ComponentKit, MySQL, Pandas, MongoDB, Mongoose, MyBatis, Express, SpringBoot, Jest, libeigen
Tools: VCS (Git, Mercurial), Linux, GDB/LLDB, Valgrind, LaTeX

Employment

Meta Menlo Park, CA
Software Engineer Intern *Jun 2022 – Sep 2022*
- Built the complete stickers experience flow (composing, posting, and viewing sticker pack from others' comment) in Facebook App Lightweight Groups iOS client with Objective-C++ and ComponentKit. The application is being used by 60K+ daily active users.
- Developed a regular expression based emoji translator that can translate text emojis into real emojis in real-time during composition.
- Engineered a new pinned post design, collaborating actively with cross functional partners (product manager, product design, and content design) to push designs beyond the scope of iOS client.
- Ran A/B tests and launched features developed; actively monitored key engagement metrics.

University of Toronto Toronto, ON, Canada
Computer Science Teaching Assistant *Jan 2021 – May 2021*
- CSC263 Data Structures and Analysis TA; hold office hours, and grade student work.
- Students master algorithm runtime analysis (worst, best, amortized), abstract datatypes (graphs, hash-maps, priority queues, disjoint sets), realizations and applications (self-balancing trees, heaps, disjoint forests, bloom filters), with a touch on randomized algorithms and P/NP-completeness.

ImageSky Suzhou, Jiangsu, China
Software Engineer Intern *May 2019 – Jul 2019*
- Overhauled the user management database and implemented backend for a monitoring web app with SpringBoot, MySQL, and MyBatis with a RESTful API design, shortening the retrieval time cost by 50%.

Ovopark Suzhou, Jiangsu, China
Software Engineer Intern *Jul 2018 – Aug 2018*
- Hybridized and fine-tuned binarization algorithms for an image pre-processing task, improving the test accuracy of the original Optical Character Recognition (OCR) machine learning model by $> 5\%$.
- Ported preprocessing scripts from Matlab to Python and coordinated the development of an end to end preprocessing pipeline.

Projects

Analytical Dive into FID, UCLA, Los Angeles, CA *Mar 2022 – Jun 2022*
- Justified that Frechet Inception Distance (FID) alone is not enough to evaluate and compare generative models – the often overlooked qualitative evaluations must also be taken into consideration.
- Proved that a significant deterioration in human perceived image quality can correspond to an improvement in the quantitative FID score.
- Investigated FID's focus on selected pairs using Grad-Cam-based method, justifying FID's bias towards complex patterns over semantic structures.

Emoji-Expression-Mask.PyTorch, University of Toronto, Toronto, ON *Nov 2020 – Dec 2020*
- Developed a real-time emotion recognition pipeline using natural masking of emoji to show results. The application aims to encourage students to turn on their cameras during online lectures and is implemented to suit laptop computation power.
- Trained a VGG-like Convolutional Neural Network (CNN) for facial expression classification, achieving balance between compute power and accuracy.
- Utilized homography estimation to naturally mask the corresponding emoji of the recognized emotion to human face, saving a huge amount of computation power compared to DNN based approaches.