

Weiji “Victor” Li






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Education

- **University of Michigan** Ann Arbor, MI
GPA: 4.00/4.00 Aug 2019 — May 2022 (Expected)
B.S.E in Computer Science, B.S.E in Data Science, minor in Mathematics
 - **Course Highlights:** Conversational AI, Natural Language Processing, Machine Learning, Computer Vision, Operating System, Web System, Software Engineering, Computer Security, UI Development, Algorithms, Computer Organization, Data Structures, Linear Algebra, Applied Regression, Probability, Theoretical Statistics
 - **Teaching:** As a tutor for proof-based linear algebra, I provided one-on-one tutoring for proofs and concepts.
- **Rensselaer Polytechnic Institute** Troy, NY
GPA: 3.96/4.00 Aug 2018 — May 2019 (Transferred Out)
B.S in Computer Science (Incomplete)
 - **Teaching:** As a tutor for data structures, I held office hour weekly and helped with projects and exams.

Research Experience

- **Learn Action Order with Temporal Order Verification (NLP)** Ann Arbor, MI
Research Assistant, Language and Information Technologies Lab, Advised by Prof. Rada Mihalcea Sep 2021 — Present
 - Pre-processed the lifestyle video dataset in order to fit our tasks, by extracting contexts for actions, resolving coreferences and filtering out video clips that were not aligned with texts.
 - Shuffled the video clips and constructed an unsupervised sequential verification training; Constructed baselines with unimodal models on downstream tasks such as action prediction; Manuscript in preparation for NAACL 2021.
- **Analyze Human Actions and Reasons with Multi-modality (NLP)**  Ann Arbor, MI
Research Assistant, Language and Information Technologies Lab, Advised by Prof. Rada Mihalcea Jan 2021 — Sep 2021
 - Collected lifestyle videos from YouTube to build the WhyAct dataset; Pre-processed the dataset by removing actions with too general reasons or too few occurrences; Built a UI for annotating reasons of actions.
 - Extracted actions and reasons from the dataset; Performed statistical and visual analysis on actions distributions, reasons clusterings, and agreements between annotators, which improved the accuracy & F1 score by 10%.
 - **Publication** — WhyAct: Identifying Action Reasons in Lifestyle Vlogs, Oana Ignat, Santiago Castro, Hanwen Miao, Weiji Li, Rada Mihalcea. Accepted to EMNLP 2021 
- **Crossmod: A Real-time AI-backed Moderation System for Reddit (HCI)**  Ann Arbor, MI
Research Assistant, comp.social Lab, Advised by Prof. Eric Gilbert Sep 2019 — May 2021
 - A system that removed violated comments on Reddit using models that learned from previous human decisions.
 - Refactored the codebase and deployed Crossmod on AWS, which enabled it to run stably on Reddit in real-time and automatically remove violated comments; Reduced human moderators's efforts by 70%.
 - Implemented a multi-thread prediction infrastructure and added dynamic re-training to the back-end model, which made the prediction 10 times faster and detected 100% more toxic comments than the previous models.
- **Attacking a Speaker Recognition System (ML & Security)**  Ann Arbor, MI
Research Assistant, Advised by Prof. Atul Prakash May 2020 — December 2020
 - Investigated recent papers and reproduced 3 existing attacks on different voice systems.
 - Proposed a novel ML attack that interfered with the SOTA speaker verification system while minimizing the noise on the Kaldi platform. Concluded the result with a research finding paper. 

Work Experience

- **Tesla** Shanghai, China & Palo Alto, CA
Software Engineer Intern May 2021 — Aug 2021 (full-time) & Aug 2021 — Present (part-time)
 - Designed and built scalable systems and APIs for Tesla's in-car experiences of Media (music, podcast, etc.).
 - Built a new karaoke service from scratch and presented it to the executive team; Created features such as video playing, time-synced lyrics and external microphone support, which got 100+ positive user feedback.
 - Refactored an existing service (QQ Music) into a new framework, which reduced 80%+ of network traffic; Added features such as hands-free searching and daily recommendation, which reduced 50%+ of user complaints.
- **Lianlian Pay** Hangzhou, China
Software Engineer Intern Jul 2020 — Aug 2020
 - Designed and built services on a financial blockchain platform; Refactored Data Query, Authentication and Parse service, which reduced 50% of network traffic and supported real-time data analysis.
 - Built an online IDE for smart contracts, which improved the loading speed of the page by 300%.
- **Ant Group (Alibaba)** Hangzhou, China
Software Engineer Intern Jul 2019 — Aug 2019
 - Designed and built back-end component for an ML-as-a-service Platform named PAI.
 - Implemented an end-to-end workflow for computer vision algorithms, from storing images to training on GPU clusters, allowing non-programmers to build ML models by just uploading datasets (used 2000+ times).
 - Created 10+ ML algorithm templates (used 1000+ times); Wrote 5+ modules in a data processing Python SDK.

Selected Projects

- **Multi-destination Planner (MAP):** A conversation-based navigation assistant with multi-destination features; As the team lead, I led a term-long product development cycle and finished it with a deliverable software. 🔗
- **Submittity:** A course management, assignment submission and grading system for college-level CS classes; As a regular contributor, I created features such as group assignment, grade analysis and UI improvements. 🔗
- **Smart Librarian-free Library:** A system for my high school library that uses face-recognition to speed up check-in, borrowing books and returning books. As the individual developer, I built the software with OpenCV and Qt.
- **Image Colorization:** Colorize black-white images using regression, classification and GAN on small dataset. 🔗
- **Twitter Sentiment Analysis:** Predict people's sentiment trend towards COVID-19 using CNN and Bert-RNN. 🔗
- **The Flow (Makeathon Michigan project):** A smart water bottle that tracks daily water consumption and performs real-time analysis; Built with Arduino and Python; Won the 1st place in Makeathon 2020 at University of Michigan.
- **AR Clock (hack.shanghai project):** A mobile app that tracks user's time and visualizes a daily report in AR.

Volunteer & Extracurricular Experience

- **Ready Player One:** A summer bootcamp for high school students with no coding experience. As the organizer, I taught them how to write code and use existing AI models by building virtual tanks and competing in games.
- **HackRPI 2019:** The largest Hackathon in RPI, with 300+ participants. As the first-year representative, I co-organized the event, and built the official website, Devpost site and live discussion board.
- **Call for Code:** A campus hackathon sponsored by IBM. As the campus volunteer lead, I hosted workshops, coordinated between the company and school, and set up network station.

Honors

- **EECS Scholar:** Apr 2021
- **James B. Angell Scholar:** Mar 2021
- **University Honors, Dean's List:** Dec 2019 — Apr 2021 (4 terms)