YUHANG (TONY) CHEN

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About Me

- I have one year of full-time software development experience and one year of two internship experience.
- I have one year of ML research experience with two professors, my ML research paper with Professor Naomi Fitter will be published this year and it is being reviewed by the IEEE conference.
- I am an ML/AI enthusiastic. I am planning to pursue an online master's degree in AI at Georgia Tech in 2022.

Work Experience

Software Engineer — July 2021 - Present

Siemens EDA (Mentor Graphics), EDA Software Company — Portland, OR

- Owned, designed, implemented, and tested **Unified Power Format (UPF) commands**, then integrated them into **Calibre Designed Solutions**, a world-leading EDA software.
- New UPF commands were well-designed and bug-free, they perfectly empower the functionality of the Calibre product and benefit the users including **Intel, TSMC, Qualcomm, and Alibaba**.
- Designed function structures, developed new features, and fixed bugs for the Calibre Product.
- Developed the Calibre products in **C**, **C++, Python, and Tcl script**.

Software Engineer Intern — June 2020 - Dec 2020

Siemens EDA (Mentor Graphics), EDA Software Company — Portland, OR

- Designed and implemented two major UPF commands with various related options according to **Intel**'s request.
- Wrote the related unit tests and users' manuals. Fixed logical bugs by using the GDB debugger.
- Refactored thousands of lines of code, then wrote comments and documentation to improve readability and efficiency.

Software Engineer Intern — Mar 2019 - Sep 2019

Electro Scientific Industries, Semiconductor Related Company — Portland, OR

- Designed a **C#** program to process **100,000+** pieces of data from a chip verification machine.
- Applied different algorithms to analyze the data to help system engineers find exceptions and make decisions.
- Implemented algorithms including peaks and valley detection, polynomial best fit of the curve, normal distribution best fit of the curve, and logistic regression.
- The software helped system engineers draw graphs and do data analysis with different algorithms. As a result, they can select a threshold to separate good and bad capacitor chips in the chip verification machine.

Research Experience

Self-Aware Comedy Robots — Sep 2019 - June 2020

Naomi. Fitter (Assistant Professor at Oregon State University) — Corvallis, OR

- Joined Dr. Fitter's **Robotics research group**, designed and implemented a few ML models for her comedy robot to detect and classify human laughter in real-time.
- Developed software using the Praat library to **extract useful data** from the recorded audio of the comedy robot.
- The useful data includes average, max/min, standard deviation of intensity and pitch.
- Created a Python program using **scikit-learn** to train machine learning models. It helped the robot detect and classify if the audience laughs during or after the joke.
- The ML models include k-nearest-neighbor, random forest, support vector machine, and ensemble model of all three previous models.
- Improved "post-Joke classification" accuracy from **53% to 85%** and set "Mid-Joke classification" accuracy to **73%**.
- The research paper is being reviewed by the IEEE conference (**"This Bot Knows What I'm Talking About!" Human-Inspired Laughter Classification Methods for Adaptive Robotic Comedians)**

Baby Behavior Psychology Analysis — Jan 2020 - July 2020

Alan. Fern (Professor and Associate Head of Research at Oregon State University) — Corvallis, OR

- Joined Dr. Fern's **research group** as a Research Assistant to use the ML technique to analyze baby behaviors.
- With the videos of NYU Psychology Research Lab, I made a website to visualize the baby's movement and detect the potential relationship between babies and toys.
- The website simulates the movements of babies and toys. I implemented multiple features including the detection of the interactions between babies and toys and the analysis of the history between babies and toy movements.

Education

Bachelor of Science: Computer Science — Graduated in June 2021

Oregon State University — Corvallis, OR

GPA: 3.87 Dean's List [2016-2021]

Skills

- C, C++, C#, Python, Java, JavaScript, jQuery, React, scikit-learn, Assembly, TCL script.