Joseph Chen

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Education

- **Case Western Reserve University** — Cleveland, Ohio
  Bachelor of Science in Computer Science; GPA: 4.00 — *August 2020-Present*

Experience

- **Parallaxis LLC** — Flushing, New York
  Part-Time Software Developer — *August 2020 - December 2021*
  - **Rattenfanger CLI**: Developed a Go command line interface bot with a team of developers to automatically checkout limited time, low stock shoes on YeezySupply and Footlocker. Monitored weekly shoe drops to detect and address changes to the website.
  - **Web Reverse Engineering**: Built core features for the bot to checkout on Footlocker by reverse engineering HTTPS requests and cookies used for anti-bot protection services using Charles Proxy and Insomnia.
  - **Continuous Delivery**: Improved developer productivity and decreased careless mistakes in production by deploying a continuous delivery pipeline with Github Actions and Linux to automatically ship a versioned build of the bot to users.
  - **Captcha Solving Library**: Architected and developed a Go library for integrating multiple captcha solving APIs to bypass anti-bot protections on the shoe retail websites.
  - **Shoe Inventory App**: Developed the frontend with Vue and Ionic for a mobile shoe inventory app with a UI designer and backend engineer.
  - **Automated mouse movements**: Researched and developed a generative adversarial neural network to automatically generate mouse movements in Tensorflow/Keras. Deployed the model using a simple Express REST API and TensorflowJS to generate mouse movements.

Projects

- **Earthquake Damage Forecasting**: Created an app for automatically forecasting earthquake damage with a partner using React, FastAPI, pandas, lightgbm, and catboost. The app was deployed using Docker and NGINX on Digital Ocean at https://earthquakedamageforecast.com/. The code is open sourced at https://github.com/jchen42703/earthquake_forecasting.
- **Automatic Gravitational Wave Detection**: Researched and developed a deep learning pipeline to automatically detect gravitational wave noise in simulated data with a team using PyTorch. The experiments were done using slurm on the Case Western Reserve University Cluster at https://github.com/jchen42703/g2net_ml_dl.
- **Automatic Kidney Cancer Segmentation**: Researched and built convolutional neural networks in PyTorch to automatically extract kidney cancer volumes from CT scans for the 2019 Kidney and Kidney Tumor Segmentation Challenge. The code is open sourced at https://github.com/jchen42703/kits19-cnn.
- **Capsule Networks for the Automated Segmentation of Left Atrium in Cardiac MRI**: Placed 2nd in the CS category of New York City Science and Engineering Fair by researching a new type of neural network for automatically extracting the left atrium. The models were implemented in Keras and were trained in Colaboratory. The code and models are open sourced at https://github.com/jchen42703/CapsNetsLASeg.

Programming Skills

- **Languages**: Python, Javascript, Go
- **Technologies**: Pandas, Tensorflow, PyTorch, FastAPI, React, Vue, Express