Bowen Zhao

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EDUCATION

- **University of California, San Diego** — San Diego, CA
  Master of Electrical and Computer Engineering — *Sep. 2019 – Present*

- **Hefei University of Technology** — Anhui, China
  Bachelor of Electronic Science And Technology, Major GPA: 3.80 /4.30 Rank 6/92 — *Sep. 2015 – June. 2019*

PROJECT

- **OS Kernel** — C
  CSE 120 Operating system — *Jan 2020 - Present*
  - **Context Switching**: Implement the kernel function that help os to allocate CPU from one process to another and make sure the function can return correct of the program PID when fork or yield called.
  - **Scheduling**: Implement different schedule policies that help multiple processes running with time sharing. These policies including FIFO, LIFO, Round Robin(RR), proportional (Stride Scheduling). By these policies, we can allocate CPU to each processes based on different requests so that we can optimal the turnaround time.
  - **Synchronization**: Implement semaphores and use it to help different processes avoid busy waiting, prevent race condition and achieve synchronization.

- **TimeCo** — C++
  ECE 141 Software foundation — *Jan 2020*
  - **Calendar system**: Basic calendar system provide output the calendar for specific months. Besides, users can add task or meeting in their own calendars, and show the summary for events in a month.
  - **Reservation system**: Reservation system provide search function which can help users to find the earliest available time given a range of time and make an appointment in users' calendars . We use virtual function to help system search for different events simple and clear.

- **Rating Prediction** — Python
  CSE 258 Web Mining and Recommender Systems — *Dec 2019*
  - **Tf-Idf model**: In this model, we count the term frequency(tf) and inverse document frequency(idf) and multiply them as tfidf of each word, and using linear model to train them.
  - **BERT**: Using BERT to analyze review text and give the prediction based on the review.

- **Image Denoising with Deep CNNs** — Python
  ECE 285 Machine learning for image processing — *Nov 2019*
  - **Overview**: Using BSDS data set as clear data, then add Gaussian noise on the image to get the noisy data. Using PSNR (Peak Signal-to-Noise-Ratio) as the optimal target.
  - **DnCNN**: Using only 3x3 convolutions in the middle part of network and repeat it N times. And using a skip connection between the first and the last layer like ResNet.
  - **U-net like CNN**: Using unpooling in order to retrieve the spatial dimension. The Network will consist of a contracting path and an expansive path, which gives it the U-shaped architecture.

- **Birds Image Classification** — Python
  ECE 285 Machine learning for image processing — *Nov 2019*
  - **Transfer learning**: Build a new classifier built on the principle of transfer learning from a pretrained VGG-16 network to classify different kinds of birds.

EXPERIENCE

- **Arm China intern**: Using python to create the testbench which aims to analyze the signal generated by Verilog module.

SKILLS

- **Programming languages**: C++, C, Python, Java, Verilog

- **Frame**: Pytorch