# Resume

**Ge Shi**

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## EDUCATION

**University of California, Davis** — Davis, CA
*Ph.D. student in Computer Science;* — *Sept. 2019 - present*

**University of Massachusetts, Amherst** — Amherst, MA
*Master of Science in Computer Science; GPA: 3.91/4.00* — *Sept. 2017 – May. 2019*

**Zhejiang University** — Hangzhou, China
*Bachelor of Engineering in Automation; GPA: 3.65/4.00* — *Sept. 2013 – July. 2017*

## PROGRAMMING SKILLS

**Languages**: Python, C/C++, Java, Matlab, SQL, Javascript, R, D3(Data Visualization), Node.js.
**Courses**: Advanced Algorithm, Machine Learning, Computer Vision, Neural Networks, Database, Distributed System.
**Abilities**: Object Oriented Programming, TensorFlow, Pytorch, Image Processing, Robotics(ROS), AWS.

## ACADEMIC PROJECTS

**Long-term study of deep learning on small datasets** — Davis, CA
*Supervisor: Prof. Ian Davidson* — *Jan. 2021 - present*

- **Explainable artificial intelligence - XAI**: Bridging the local XAI method and global XAI method by dissecting the nodes of deep learner layer by layer.
- **Multi-view multi-instance learning**: Built a deep multi-model architecture with MLP ensemble model to encode multi-task multi-trial brain activities, which lies in a novel multi-view multi-instance setting.
- **Weighted data augmentation with GAN**: Proposed a weighting strategy over the GANs generated synthetic data that has a high probability to improve the agnostic learning accuracy.
- **Experiments on brain task fMRI data**: Long-term study on brain task fMRI data collected for schizophrenia prognosis. A bunch of downstream machine learning tasks are inspired by and validated on the data.

**Super Congealing** — Amherst, MA
*Supervisor: Prof. Erik Learned-Miller* — *March. 2018 - March. 2019*

- **Primary Goal**: The inspiration is the effect of camera rotation on the photograph is invariant to the depth of scene while the effect of camera translation is proportional to the inverse of depth. The purpose of the project is to get the estimations of camera motion, relative depth map of the scene and stitching video frames to form a panorama.
- **Pixel Congealing**: Congealing is a way of aligning a set of images simultaneously, using an entropy minimization procedure. I implemented the algorithm in python based on negative log-likelihoods minimization and gradient descent to tweak optimal camera rotations, translations and depths parameters.

**Multi-tier Online Book Store** — Amherst, MA
*Supervisor: Prof. Prashant Shenoy* — *Feb. 2019 - May. 2019*

- **Multi-tier Full Stack Development**: Designed a two-tier online book store 'Pygmy' with both a front-end and a back-end. Using the lightweight web frameworks Flask in Python to build up the three servers structure, including FrontEnd server, Order server and Catalog server.
- **Distributed concurrency**: Achieved concurrency of allowing multiple users to access the same database and buy books leveraging Python threads. Each component is bound with a HTTP REST interface.
- **Supporting large workloads**: Added replication and in-memory caching to improve request processing latency and organize them with round-robin load balancing algorithm. Consolidated the fault tolerant functionality for the front-end node to detect and recover from back end node failures.

## INTERNSHIP EXPERIENCES

**NetEase Huyu Incorporation, Limited** — Hangzhou, China
*Game AI Software Engineer* — *Nov. 2016 - Feb. 2017*