John **Dang**

Computer Science Student · Software Engineer · AI / ML Researcher

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Education

University of California, Los Angeles (UCLA) *Los Angeles, CA*

B.S. in Computer Science, GPA: 3.8 *Sep. 2018 - Jun. 2022*

- Achievement Scholarship Recipient, Association for Computing Machinery (President of AI), Upsilon Pi Epsilon (CS Honor Society)
- Relevant UCLA Coursework: Natural Language Processing (Graduate), Reinforcement Learning (Graduate), Neural Networks and Deep Learning, Probabilistic Decision Making and Reinforcement Learning, Machine Learning, Computer Vision, Data Mining, Artificial Intelligence, Algorithms and Complexity, Data Structures and Algorithms, Object-Oriented Programming, Software Construction, Probability Theory, Linear Algebra, Multivariate Calculus, Differential Equations, Real Analysis, Discrete Structures, Statistical Reasoning, Research, Computer Organization
- Independent Coursework: Stanford Machine Learning (Coursera), Deep Learning (deeplearning.ai), Deep Reinforcement Learning (Berkeley)

Work Experience

Amazon Web Services (AWS) *Seattle, WA*

Software Development Engineer Intern *Jun. 2020 - Sep. 2020*

- Elastic Compute Cloud (EC2) Networking Org. Collaborated with engineers to design and implement internal facing production operator tool.
- Implemented infrastructure for logging of serialized EC2 host security configuration state change data structures to AWS Cloudwatch **(Java)**.
- Built command-line interface for querying historical security configuration state data from AWS CloudWatch, deserializing this data, and programmatically reproducing host state at any time in the past for complex analysis of host behavior on a local machine **(Java)**.

UCLA Vision Lab *Los Angeles, CA*

Machine Learning Researcher; Advisor: Professor of Computer Science, Stefano Soatto *Mar. 2020 - Present*

- Multi-task learning in computer vision through deep learning project. Read and implemented algorithms from computer vision research papers.
- Designed, tuned, and trained novel deep learning models for performing multiple computer vision tasks including optical flow and depth prediction using a single model **(Python/Pytorch)** on VKITTI autonomous driving dataset.

Center for Vision, Cognition, Learning, and Autonomy (VCLA) Lab at UCLA *Los Angeles, CA*

Machine Learning Researcher; Advisor: Professor of CS and Statistics, Song-Chun Zhu *May. 2019 - Present*

- Researching scene decomposition, transfer learning, reinforcement learning, and causal learning at VCLA lab under Prof. Song-Chun Zhu.
- Developing VRGym, an AI research platform for training and evaluating agents in 3D environments built on on **(Unreal Engine/C++/Python).**
- Designed and implemented automatic structured, stochastic 3D scene generation including integration with Shapenet and Partnet. Wrote scripts for automated import and conversion of raw 3D model files into Unreal Engine assets. VRGym platform will be open-sourced soon.
- Integrating Pyro, a Pytorch-based probabilistic programming language for probabilistic inference in stochastic VRGym environments.
- Demonstration of work was presented by Professor Song-Chun Zhu during an invited talk at **World AI Conference 2019** in Shanghai.

Sike Insights (Kleiner Perkins Backed Startup) *Los Angeles, CA*

Deep Learning Engineer *Oct. 2018 - Oct. 2019*

- Created deep learning model for five-factor OCEAN personality trait extraction from text for enabling client companies' to better understand employees. Model predicted 0.0-1.0 valued personality traits **within 0.015**. Utilized state of the art natural language processing algorithms.
- Designed and implemented data infrastructure, including storage on **AWS** Simple Storage Service and Relational Database Service **(MySQL)**.
- Ran multi-GPU distributed **Tensorflow** model training on AWS Elastic Compute Cloud, and model deployment on AWS Elastic Beanstalk.

Howard Hughes Medical Institute (HHMI) / Ozcan Research Group (ORG) *Los Angeles, CA*

Machine Learning Researcher; Advisor: Professor of Electrical Engineering, Aydogan Ozcan *Oct. 2018 - Jun. 2019*

- Developed deep learning system for quick, mobile, and accurate protein analysis of blood sample images for disease diagnosis in **Tensorflow**.
- Custom Convolutional Neural Network system achieved **tenfold improvement** over traditional methods in efficiency on embedded devices.
- Presented work, *Fast Particle Analysis Using Machine Learning*, at HHMI Day Research Conference. Poster here: www.johndang.me/ozcan

Logos News LLC. *Los Angeles, CA*

Software Engineering Intern *Oct. 2018 - Dec. 2018*

- Developed iOS app in for diverse, crowd-sourced, and personalized news platform **(Swift)**. Performed various app bug fixes and refactoring.
- Implemented article text highlighting feature, enabling text-specific social interaction, discussion, and bias ratings.
- Redesigned Firebase database structure and wrote new Google Cloud Functions, lowering data processing and app loading times **(Javascript)**.

Skills

Programming Python, C++, C, Java, Javascript, Matlab, HTML, CSS, Bash, Octave, Swift, SQL

Technologies Tensorflow, Pytorch, Git, Github, Pyro, Keras, SKLearn, OpenAI Gym, AWS, ROS, Firebase, Unreal Engine, LaTeX