

FRANCISCO (CISCO) ZABALA

zabala@caltech.edu | github.com/datasith | linkedin.com/in/datasith | U.S. Citizen | (626) 486-6895

EXPERIENCE

Data Scientist, Remote Sensing & Computer Vision

Jul 2022 – Present

Amazon Web Services (AWS)

Remote, CA

- Developing satellite imagery Deep Learning solutions for Public Sector customers
- Leading R&D efforts in self-supervised learning for object detection applications

Senior Data Scientist

Feb 2022 – Mar 2022

Walmart Global Tech

Remote, CA

- Architected end-to-end object tracking solutions spanning three product verticals
- Devised scaling strategies for deploying a CV-based Inventory Tracking System across 4700+ stores

Deep Learning Researcher

Aug 2021 – Feb 2022

Walmart Store No. 8 (Incubator)

Remote, CA

- Contributed to the fastest project to graduate into **Walmart Global Tech**
- Implemented heuristic algorithms for determining On-Shelf Availability of retail products

Founder

Jun 2013 – Jul 2021

ACROBOTIC

Pasadena, CA

- Led a team of engineers to develop and deliver custom IoT products to a broad customer base
- Supported customer adoption of IoT products ranging from DIYers to National Lab engineers

Machine Learning Engineer

May 2012 – May 2013

IO Rodeo

Pasadena, CA

- Manufactured custom lab instrumentation for behavioral studies of fruit flies
- Developed Control and Human-Machine interfaces for interactive lab instruments

EDUCATION

California Institute of Technology

Pasadena, CA

PhD Candidate (all but dissertation)

May 2011 – May 2013

Master of Engineering

Aug 2009 – May 2011

California State University, Fullerton

Fullerton, CA

Bachelor of Science in Electrical and Computer Engineering

Aug 2003 – May 2007

PROJECTS

Perpetual Inventory | Python, Android, PyTorch, TensorFlow, GCP

- Combined heuristic algorithms and Convolutional Nets to detect and classify retail product images in real-time

Robot-Fly Interactions | Python, ROS, Arduino (C++)

- Developed a vision-based, real-time apparatus for quantifying interactions between real and robotic flies
- Publication: <https://pubmed.ncbi.nlm.nih.gov/22727703/>

Insect Flight Kinematics | Python, MATLAB

- Developed a high-speed videography apparatus for imaging wing and body motion of insects
- Implemented Unsupervised Learning methods (k-means clustering) for quantifying insect flight kinematics
- Publication: <https://pubmed.ncbi.nlm.nih.gov/19376952/>

DARPA Urban Challenge | C++, Electromechanical Hardware

- Implemented a vision-based algorithm for our team vehicle to perform k-turns
- Assisted in electromechanical retrofitting of our team vehicle's hardware for driverless operation

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML/CSS, MATLAB

Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm, AWS Cloud, GCP

Libraries: Pandas, NumPy, Matplotlib, Keras, TensorFlow, PyTorch