

FRANCISCO (CISCO) ZABALA

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EXPERIENCE

Specialty Domain Lead, Computer Vision & IoT

Oct 2024 – Present

Amazon Web Services (AWS)

Remote, CA

- Designing AI/ML architectures that align US federal customer needs with AWS ProServe delivery practices
- Providing technical oversight for delivery of computer vision, IIoT, supply chain and robotics solutions

Data Science Tech Lead, Computer Vision

Sep 2023 – Oct 2024

Amazon Web Services (AWS)

Remote, CA

- Delivered scalable solutions to address customer challenges in the areas of computer vision and IIoT
- Led mid-sized teams to deliver end-to-end AI/ML solutions across data domains for US federal customers

Data Scientist, Remote Sensing & Computer Vision

Jul 2022 – Sep 2023

Amazon Web Services (AWS)

Remote, CA

- Built end-to-end ML solutions for deployment in hybrid edge/cloud environments
- Developed pre-training strategies for geospatial foundation models

Research & Senior Data Scientist, Computer Vision

Aug 2021 – Feb 2022 – Mar 2022

Walmart Global Tech

Remote, CA

- Architected end-to-end object tracking solutions spanning three product verticals
- Developed heuristic and deep learning algorithms for shelf availability and planogram compliance of products

Founder

Jun 2013 – Jul 2021

ACROBOTIC

Pasadena, CA

- Led a team of engineers to develop and deliver custom-built instruments for remote sensing applications
- Drove customer adoption of IoT products ranging from DIYers to National Lab engineers

EDUCATION

California Institute of Technology

Pasadena, CA

PhD Candidate (all but dissertation)

May 2011 – May 2013

Master of Engineering

Aug 2009 – May 2011

SELECTED PROJECTS

Object Detection in Satellite Imagery | Python, Amazon SageMaker, PyTorch, AWS

- Developed custom algorithms for experimenting with pre-training strategies for object detection

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

- Combined heuristics and convolutional nets on edge devices to detect retail products 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

- Built a high-speed, high-throughput videography apparatus for imaging wing and body motion of insects
- Applied unsupervised learning algorithms to quantify insect flight kinematics
- Publication: <https://pubmed.ncbi.nlm.nih.gov/19376952/>

DARPA Urban Challenge | C++, Electromechanical Hardware

- Implemented vision-based algorithms for vehicle navigation in urban environments
- Contributed to 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, Kubernetes, GCP, AWS, VS Code, PyCharm, edge computing, IIoT, remote sensing

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