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Charlie Yan

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EXPERIENCE

Software Engineer IC V, Meta Platforms

Fremont, CA, April 2024—Present

- Data Center Robotics - Asset Scanning differential drive robot lead
 - ROS2 LIDAR, Nav2, Behavior Tree, Architecture, various sensing use cases
 - Backend integration with Meta inference (SAM3, DINO, etc.), architecture
- FIXR - Mobile manipulator platform
 - TinyVLA, Diffusion Policy 3D, Visual Servoing based manipulation control for SSD / BBU server swap
 - Powered caster (4x differential drive wheels) base control + odometry
 - Kinova, Franka arm integration

Simulation Engineer, (NASA Ames Research Center)

Mountain View, CA, July 2020—2024

- Support SIM1-SIM5 simulation training activities for 2024 VIPER **lunar south pole ice exploration mission**
 - Software integration, architecture, coordination across Gazebo9 based simulation, Docker, **over 100 software components**
 - Ground control (GC) team operations with other VIPER teams across NASA centers (JSC, etc.) in Multi-Mission Operations Center (MMOC)

Lead Software Engineer, Pneubotics / Canvas / Otherlab

San Francisco, CA, Apr 2016—May 2019

- Software and architecture
- Path planning and algorithms, computational geometry
- Kinematic, trajectories, estimation, non-linear / convex optimization
- Machine vision: LIDAR, RGB, sensor fusion, motion capture ground truth
- Hardware shakeout, cycle testing, safety and fault management, feedback control tuning

Software Development Engineer II, Amazon.com

May 2013—Dec 2015

- Automated Accounting platform
 - Billions in cash transactions per day, onboard international businesses in new markets in Asia and Europe
 - Increase automated accounting cover from 80% to 92%, accelerated process with configuration-driven refactor
 - Reduce monthly operational tickets by 15%
 - Service to track remittance, settlements: Java, AWS: DynamoDB, SQS/SNS, and S3

EDUCATION

San Mateo Adult School — Certified Medical Assistant

- Blood draw, injections, medical terminology, NHA exam prep

University of California, Santa Cruz College of Engineering — Robotics (Applied Math) M.S. Thesis

Graduated June-2023, GPA 4.0

- Numerical Linear Algebra, Nonlinear Control, Convex Optimization, Feedback Control, Bio-robotics
- First author on Arxiv 2304.00595, third author on conference paper under Professor Abhishek Halder
- Thesis in Euler-Equation Optimal Mass Transport, Tensorflow v2 & Pytorch PINN deep-learning systems of PDEs

University of Michigan College of Engineering — Dual Degree in CS and EE

Graduated May-2013, *Magna Cum Laude*

Coursera Certificates

- Control of Mobile Robots - Georgia Tech
- Robotics: Perception - University of Pennsylvania
- 100%: perspective geometry, SVD, camera pose estimation, bundle adjustment, SFM