

Chengtai Du

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EDUCATION

University of Washington

Master of Science in Electrical and Computer Engineering

Seattle, USA

Sep. 2026 – Jun. 2028

Xi'an Jiaotong University

Bachelor of Engineering in Information Engineering

Xi'an, China

Sep. 2021 – Jun. 2026

Major GPA: 92.49/100; ranked top 3% among 203 students.

TECHNICAL SKILLS

Programming Languages: Python, C, C++, Verilog, Bash/PowerShell, MATLAB, Scala, FORTRAN

Tools and Frameworks: Docker, Kubernetes, Git, Linux, Jenkins, SQL, PCB Design, CAD, Multisim, ADS

Machine Learning: PyTorch, OpenCV, scikit-learn, Pandas, NumPy, pillow, Open3d

Documentation & Visualization: LaTeX, Xmind, Visio

INTERNSHIPS

Perception and Reconstruction Algorithm Engineer Intern

Jun. 2026 – Sep. 2026

Hikvision

Hangzhou, China

- Built an automated Blender synthetic-data pipeline, orchestrating headless rendering subprocesses to generate stereo structured-light images and depth maps for downstream 3D vision training
- Engineered and integrated a C++ structured-light stereo reconstruction module with camera calibration, rectification, correspondence matching, and triangulation; integrated it into the pipeline for end-to-end depth generation
- Validated reconstructed depth against NVIDIA Isaac Sim ground truth through pixel-level error analysis, confirming accuracy within project tolerance

Perception and Reconstruction Algorithm Engineer Intern

Mar. 2026 – Jun. 2026

Cogleap.AI

Beijing, China

- Directed the evaluation of feed-forward 3D reconstruction models for object-level reconstruction and robotic deployment in real-world scenes
- Developed a SAM 3D-based metric-scale recovery pipeline using RGB-D depth, camera intrinsics, PCA pose initialization, ICP registration, and multi-stage scale correction to align single-image 3D reconstructions with real-world camera coordinates
- Deployed the reconstruction module with Docker on a wheeled robot testbed, enabling end-to-end execution from SAM 3D inference to metric point-cloud alignment and mesh export; validated the system in live demos at FAIR plus 2026 and BEYOND Expo 2026

Emerging Talent Program Intern

Aug. 2025 – Nov. 2025

HSBC Software Development

Xi'an, China

- Delivered 20+ data tickets using Spark, implementing field additions, deletions, and table joins; developed 30+ unit tests with 90%+ coverage to ensure pipeline reliability
- Coordinated 10+ Jenkins CI/CD deployments with 100% success rate, ensuring stable production releases
- Diagnosed and resolved schema alignment errors by debugging logic modules and using Spark SQL to compare production and test environments

PROJECTS

Event-Based Object Detection

Jun. 2024 – Dec. 2025

Institute of Artificial Intelligence and Robotics, Xi'an Jiaotong University

PyTorch, OpenCV, Prophesee Metavision SDK

- Designed and implemented the C2f-LSTM module, combining the spatial efficiency of C2f (2-stage FPN) with the temporal modeling capability of LSTM, providing a specific solution for event-based data multi-scale spatiotemporal feature extraction
- Led the joint development of Channel-Wise Learnable Leaky Integrate-and-Analog-Fire neurons, enabling channel-specific temporal dynamics and improving object detection accuracy, which achieved 48.1% mAP on Gen1 dataset and 48.5% on 1 Mpx dataset
- Drove large-scale model training and experimentation, including modular analysis, integration of novel components, and distributed multi-GPU training

Industrial Measurement

Jan. 2024 – May. 2024

Xi'an Jiaotong University Robotics Club

Python, OpenCV, ONNX

- Spearheaded the adoption of YOLOv5-seg as the core model for industrial component detection and segmentation from depth camera input, supporting a size estimation system through extracting table corner coordinates from the depth map with affine transformation for top-down view correction, and calculated object dimensions based on pixel-to-length ratio
- Resolved edge misclassification in RGB-only segmentation by introducing depth-assisted edge detection, significantly enhanced robustness in scenarios with linear screw alignment or poor visual contrast
- Achieved 90%+ classification accuracy and 100% spatial region assignment accuracy for randomly distributed components under real-time constraints, contributing to a National First Prize in the China Robot Competition and RoboCup Robot World Cup China