LANG CHENG

Manchester, UK

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PROFILE

MSc Robotics student at the University of Manchester with a BEng in Computer Science and internship experience building Python data workflows to support product iteration. Strong in structuring messy data (logs + text), running reproducible experiments (config-driven runs, Git), and translating requirements into implementable processing steps with clear documentation.

EDUCATION

University of Manchester Sep 2025 – Present
MSc Robotics
Focus: robotics software development, perception/ML foundations, reproducible experimentation

Beijing Institute of Technology, Zhuhai Sep 2021 – Jun 2025
BEng Computer Science and Technology
Focus: programming fundamentals, data processing, applied ML concepts

TECHNICAL SKILLS

Programming	Python; C++ (basic); MATLAB
Data & Pipelines	Data cleaning/processing (pandas, NumPy); parsing and normalizing logs/text; data-quality checks; traceable workflows (inputs → transforms → outputs)
Engineering Practices	Git; config-driven runs (YAML/JSON); structured READMEs and runbooks for reproducibility; metric tracking and comparison
ML / CV (supporting)	PyTorch (training/evaluation loops); object detection (YOLOv8); failure-case analysis (occlusion/lighting/viewpoint)

WORK EXPERIENCE

Zhuhai Hengqin Boyi Data Technology Co., Ltd Mar 2025 – Jul 2025
AI Product Intern *Zhuhai, China*

- Built Python (pandas/NumPy) data preparation workflows for structured data and text/usage logs; standardized schemas and formats to make analysis and iteration repeatable.
- Worked with stakeholders on requirement analysis and feature definition; translated business needs into concrete data collection, processing, and evaluation steps.
- Supported prompt iteration with lightweight evaluation and change tracking; documented updates and outcomes to enable consistent team decision-making.
- Synthesized user feedback and basic usage metrics into actionable notes that informed prioritization and product improvements.

PROJECTS & RESEARCH

Robot Vision Study: ResNet-18 vs. SIFT–BoW–SVM on iCubWorld Oct 2025 – Dec 2025
Computer Vision / Engineering Evaluation *University of Manchester*

- Built two end-to-end recognition pipelines (classical features + ML vs. transfer learning) and ran controlled training/evaluation under viewpoint and illumination variation.
- Designed reproducible experimentation: validation-based model selection, structured hyperparameter sweeps (e.g., BoW vocab size; SVM C; KNN k; CNN lr/weight decay/batch size), and consistent metric tracking.
- ResNet-18 achieved ∼**98–99%** test accuracy; best SIFT–BoW–SVM achieved ∼**56%**. Produced confusion-matrix analysis and documented failure modes/trade-offs for engineering decisions.

Autonomous Object Retrieval Robot (YOLOv8 + Color Sorting) Course Project
Software Development / Robotics *University of Manchester*

- Delivered a perception-to-action system enabling a mobile robot to detect colored objects, navigate for pickup, and sort into matching bins.
- Integrated real-time YOLOv8 detection with task logic; added practical robustness checks for missed detections, occlusions, and lighting changes.
- Improved system reliability through iterative testing, parameter tuning, and structured run notes to accelerate debugging and team collaboration.

Topic Modelling + Social Network Analysis on Reddit Corpora Final Year
A research led by Dr. Han C.W. HSIAO *Undergraduate Thesis*

- Developed an end-to-end Python pipeline for large text corpora: preprocessing, LSA topic modelling, topic interpretation, and reporting-ready outputs.
- Performed social network analysis (centrality measures) and created visualizations with concise written summaries for non-technical communication.
- Organized experiments and outputs with a reproducible folder structure and clear documentation for re-runs and review.

Python Data Processing for Product Usage Logs Internship Project
Data Engineering (Foundations)

- Implemented scripts to parse, clean, and normalize usage logs and text data for analysis and reporting.
- Added practical data-quality checks and traceability (inputs $\rightarrow$ transformations $\rightarrow$ outputs) to support reliable iteration.