JIANG, Panfeng

jiangpf2026@gmail.com | +86 153 8185 2076 | GitHub: jiangpf2022.github.io/academic_homepage

EDUCATION

ShanghaiTech University (ShanghaiTech) Sep 2022 – Present

- **Bachelor of Engineering in Computer Science** **GPA: 3.81/4.0**
- **Minor in Mathematics & Applied Mathematics** **Program Ranking: 12/169**
- 2023 ShanghaiTech Merit Student Award (Top10%)

University of California, Berkeley Aug 2024 – Jun 2025

- **Undergraduate Exchange Program in Computer Science** **GPA: 3.8/4.0**
- 2025 ShanghaiTech International Exchange Program Scholarship ($14,000)

AWARDS

- **Outstanding Winner Award (Top 0.1%)**: Mathematical Contest in Modeling 2025 (MCM) Jun 2025
- **American Mathematical Society Award (Top 3 / 21,054)**: MCM May 2025
- **1st Place:** Bay Area Data Science Summit 2025 @ UC Berkeley endorsed by Wells Fargo Mar 2025

RESEARCH INTERESTS & CAPACITIES

- **Event-based Vision:** Proficient in event data denoising, asynchronous feature tracking, Kalman filtering, and RANSAC-based pose estimation. Capable of developing real-time event-driven perception and localization systems that remain robust under high-speed motion and challenging illumination conditions.
- **Computer Vision**: Well-versed in object detection, multiview geometry, and 3D reconstruction, with additional experience in generative vision and vision–language models. Able to apply advanced visual understanding algorithms to dynamic and complex real-world environments.

PUBLICATION

- H. Su, Y. Feng, D. Gehrig, **Panfeng. Jiang**, L. Gao, X. Lagorce, and L. Kneip, "A Linear N-Point Solver for Structure and Motion from Asynchronous Tracks," May 2025, **Accepted (Highlight Paper),** *the IEEE/CVF International Conference on Computer Vision*
- **Panfeng Jiang**[1],Yunchuan Li[1], Junting Chen, Jiacheng Du, Zixuan Chen, Chenrui Tie, Jiajun Deng, Lin Shao, "LISN: Language-Instructed Social Navigation with VLM-based Controller Modulating," September 2025, **Submitted,** *The 2026 IEEE International Conference on Robotics & Automation*
- **Panfeng. Jiang,** Max Van Fleet, Waitong Zhang, "Improved Analysis For Variance-Aware Langevin Monte Carlo Thompson Sampling," September 2025, **Submitted**, *The 37th International Conference on Algorithmic Learning Theory*

RESEARCH EXPERIENCES

Lin Shao's Lab, National University of Singapore Jun 2025 – Sep 2025

Research Assistant / Intern *Advisor: Dr. Lin Shao*

- Deployed and integrated the RoboPoint vision–language model into a ROS-based navigation framework, enabling robots to interpret social cues and language instructions in real time.
- Extended the Social Force Model (SFM) with dynamic, VLM-conditioned parameters and costmaps, improving socially compliant behaviors such as yielding, following, and keeping context-aware distances.
- Built and validated a VLM-driven social navigation pipeline in ROSNav-Arena 2.0, combining fast-slow control architecture with DWA/TEB planners to achieve real-time, collision-free navigation in complex human–robot interaction scenarios.

Weitong Zhang's Lab, UNC Chapel Hill Apr 2025 – Present

Research Assistant *Advisor: Dr. Weitong Zhang*

- Integrated the latest proof framework for linear bandits into the Langevin Monte Carlo Thompson Sampling (LMC-TS) environment; formalized the convergence behavior of LMC toward a Gaussian distribution under

infinite steps and aligned it with cutting-edge regret analysis for linear bandits, resulting in a refined and improved upper bound on regret.

- Introduced a variance-aware mechanism to the framework by incorporating heteroscedasticity across actions moving beyond standard homoscedastic assumptions to derive a more nuanced and practical regret bound that adapts to varying noise levels.
- Addressed the finite-step LMC setting where sampling is approximately Gaussian by deriving a regret bound explicitly dependent on the number of exploration steps Kt. This bridges asymptotic theory with practical application, demonstrating convergence to the classical linear bandit bound as $Kt \to \infty$, while maintaining computational efficiency for finite Kt.

Mobile Perception Lab, ShanghaiTech University Apr 2023 – Mar 2025
Research Assistant *Advisor: Prof. Laurent Kneip*

- Developed the core real-time detection module for identifying LED matrices, and contributed to the LED encoding and tracking modules ensuring high-precision localization and stable data transmission.
- Integrated feature trackers including ArcStar and RATE for the second publication, enabling capture of temporally varying key points. This enhanced the extraction of event-based feature locations, supplying the solver with more accurate and richer tracking data for improved ego motion estimation.

SELECTED PROJECT EXPERIENCES

Disentangling Object Motion for Self-supervised Depth Estimation Sep 2023 – Jan 2024
CS172: Computer Vision I

- Led the design of a motion disentanglement module to segment dynamic objects and compensate for their motion, significantly enhancing depth estimation accuracy in dynamic environments; developed an occlusion-aware cost volume and a reprojection loss function to improve depth prediction consistency in complex scenes with occlusions and motion.

Instance-level 6-DoF Object Pose Estimation with an Event Camera Feb 2024 – Jun 2024
CS284: Simultaneous Localization and Mapping

- Built a real-time 6-DoF object pose estimation system using event cameras, achieving robust performance under high-speed motion and low-light conditions; implemented a multi-stage estimation pipeline incorporating convex hull extraction, CAD model alignment, and ICP refinement, substantially increasing pose estimation accuracy and system robustness.

ACTIVITIES

CS101A, Data Structure (ShanghaiTech Honor Class) *Teaching Assistant* Aug 2025 – Present

- Assisted in designing and launching the university's first honors-level data structure course, developing syllabus, programming assignments, and advanced instructional materials tailored for high-achieving students.

Rubik's Cube Competitions *Staff & Referee* Jul 2023 - Mar 2025

- Officiated as staff and referee for multiple official Rubik's Cube competitions, including Bay Area Speedcubin' 65, Berkeley Fall 2024, Berkeley October Weekday Tricubealon 2024, , and Changsha Rubik's Cube Open 2023.
- Enforced competition regulations to ensure fair play and impartial judging throughout events; coordinated competitor flow and managed station operations to maintain efficient event pacing; supported overall event logistics including setup, registration, and awards facilitation.

"1001 Inventions" Curation, Humanities Institute of ShanghaiTech Jul 2025
Designer

- Designed a geometric pattern for a specialized Rubik's Cube, selected for display in the Institute's "1001 Inventions" exhibition. Inspired by historical motifs, the tessellation design integrates mathematical precision with aesthetic innovation, recognized for its conceptual depth and distinctive visual appeal.

OTHER QUALIFICATIONS | SKILLS

- **TOEFL**: 106 L28 R28 W 24 S26 | **COMPUTING**: C/C++, Python, ROS (Robotic Operation System), Latex