Tony (Minxing) Pan

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EDUCATION

UNIVERSITY OF MICHIGAN COLLEGE OF ENGINEERING,   **Ann Arbor, MI**
Bachelor of Science and Engineering in Computer Science   *Sep 2018 - Apr 2022*
GPA: 3.66/4.0; Major GPA: 3.85
Currently Enrolled: **Autonomous Robotics Design Experience**, Linear Algebra
Previous Coursework: Algorithms, Data Structures, Computer Organization, Multi & Vector Calculus, Discrete Math

STANFORD UNIVERSITY,   **Palo Alto, CA**
High School Summer College   *Jun 2017 - Aug 2017*
GPA: 3.8/4.33
Coursework: Programming Methodology, Ordinary Differential Equations and Linear Algebra

EXPERIENCE

University of Michigan Soar Cognitive Architecture, EECS Professor John E. Laird   **Ann Arbor, MI**
Assistant in Research   *Jan 2019 – Present*
• Designed, built, and programmed an overhead camera system for localization and reducing global cumulative odometry error in robot mapping using ArUco fiducials from the OpenCV computer vision library, linear transformations and change of basis, and multithreaded Python programming
• Integrate the Soar Cognitive Architecture with Anki's Cozmo robots, train intelligent agents to learn tasks such as stacking cubes and navigation with rewards and reinforcement learning in Soar and Python
• Building a high-level graphical representation (drag and drop programming language GUI) of Soar

University of Michigan College of Engineering   **Ann Arbor, MI**
Grader   *Sep 2019 – Present*
• Grading homework assignments for the course EECS 203 Discrete Mathematics

University of Michigan EECS Professor. Benjamin J. Kuipers   **Ann Arbor, MI**
Assistant in Research   *Nov 2018 – Present*
• Building a physical representation of spatial knowledge of intelligent agents based on the Hybrid Spatial Semantic Hierarchy (HSSH) on Anki's Cozmo and Vector robots in Python
• Wrote a report on the HSSH and future work

University of Michigan Materials Science Shtein Lab   **Ann Arbor, MI**
Assistant in Research   *Oct 2018 – Jul 2019*
• Developed hardware (flex PCB, Particle, Arduino) and software (C/C++) for a kirigami sensor project
• Design, build, and program a novel 3D printer (Marlin, OctoPi, Python, C/C++, Peltier, RAMP)

Weizmann Institute of Science   **Rehovot, Israel**
International Summer Science Institute   *Jul 2018 – Jul 2018*
• Conducted research project "Making the Invisible Visible: Optimizing Laser Speckle Imaging Using Machine Learning and Targeted Recoloring" with Prof. Vyacheslav Kalchenko
• Trained binary classifiers with Fast Random Forest algorithm on FIJI and applied on images with higher statistical noise
• Developed a workflow to enhance laser speckle images for real time surgical use in FIJI Macro and Java code

PUBLICATION

Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE)   **San Francisco, CA**
Machine Learning Assisted Blood Vessel Segmentation in Laser Speckle Imaging   *Mar 2019*
• Gave an oral presenter at the SPIE Photonics West Conference

AWARDS

University Honors Dean's List   *Dec 2018*
International Science and Engineering Fair (ISEF) Finalist   *May 2018*
• Made my own graphene supercapacitors from inexpensive and available material
• Won grand award at Detroit science fair and competed at ISEF
FIRST Robotics Competition (FRC) Dean's List District Finalist   *Mar 2017*
• Captain of a high school robotics team and mentor of two middle school teams for two years
• Dean's List celebrate students with mentorship, leadership, and technical accomplishment

SKILLS

Programming: C++/C, Python, Java, Git, HTML/CSS, Soar, ImageJ, Assembly, Matlab
Robotics: OpenCV, SLAM, LCM, Arduino, Particle