Kaitlynn T. Pineda

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RESEARCH OVERVIEW

My research focuses on integrating robot-initiated social small talk into physical, human-robot collaborative tasks, aiming to enhance interactive experiences without causing task disruptions. I am currently developing an autonomous robot system powered by Large Language Models (LLMs) that will serve as a collaborative teammate and engage in small talk.

EDUCATION

Johns Hopkins University, Baltimore, MD 08/2021 – Present
PhD *in Computer Science*
Advisors: Chien-Ming Huang and Gregory D. Hager

Johns Hopkins University, Baltimore, MD 05/2024
MSE *in Computer Science*
Selected Coursework: Human-Robot Interaction, Human-Computer Interaction, Computer Vision, Deep Learning

Yale University, New Haven, CT 08/2017 – 05/2021
Bachelor of Science *in Electrical Engineering and Computer Science,* ***Certificate*** *in Spanish*
Selected Coursework: Intelligent Robotics Laboratory (Graduate level), Building Interactive Machines, Artificial Intelligence, Neural Networks and Learning Systems, Systems Programming, Digital Systems, Circuits and Systems Design, Electronics

RESEARCH EXPERIENCE

Johns Hopkins University, Baltimore, MD 08/2021 – Present
Graduate Research Assistant

- Conducts research in the Intuitive Computing Lab and Laboratory for Computation Sensing and Robotics

Yale University, New Haven, CT
Undergraduate Research Assistant (STARS II Program) | Social Robotics Lab 08/2019 – 05/2021

- Designed a project to detect human uncertainty for task completions in Human-Robot Interaction settings
- Developer on the Yale ***Robots for Good*** project that helps children fight social isolation during COVID-19
- Conducted behavioral analysis of children with ASD using a long-term, in-home socially assistive robot
- Presented at the 2021 STARS II Symposium and the 2021 Pauli Murray College Mellon Forum

Undergraduate Research Assistant (STARS I Program) | Social Robotics Lab 05/2018 – 07/2018

- Designed experimental structure to analyze the human sense of fairness and trust in robots
- Programmed a video game interface through Unity for participant interaction
- Presented at the 2018 STARS I Summer Symposium and the 2018 Yale Undergraduate Research Symposium

Université catholique de Louvain, Louvain-la-Neuve, Belgium 05/2019 – 07/2019
Research Assistant

- Worked with convolutional neural networks (CNNs) for biomedical image segmentation
- Trained an autoencoder to capture the morphological structure of the segmentation labels
- Regularized the CNN-based segmentation model based on the decoder learned from the priors

WORK EXPERIENCE

Meta, Menlo Park, CA
Software Engineering Intern | Oculus 06/2021 – 08/2021

- On the Planck Length team within Facebook Reality Labs creating a pipeline to facilitate synthetic data generation
- Developed internal visualization tools for the verification of proposed algorithms

Software Engineering Intern | FAIAR 06/2020 – 08/2020

- On the AI Applied Research – Conversational AI team working on dialog policy for future smart glasses
- Developed internal testing tools for android and web-based platforms

SELECTED PUBLICATIONS

Peer-Reviewed Journal Articles

[J-1]. G. Ajaykumar, **K. T. Pineda,** & C. M. Huang. (2023). *Older adults' expectations, experiences, and preferences in programming physical robot assistance.* International Journal of Human-Computer Studies, 180, 103127.

Peer-Reviewed Conference Papers

[C-2]. N. Salomons, **K. T. Pineda**, A. Adéjàre, & B. Scassellati. (2022). *"We Make a Great Team!": Adults with Low Prior Domain Knowledge Learn more from a Peer Robot than a Tutor Robot.* In proceedings of the 2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI '22)

[C-1]. N. Tsoi, J. Connolly, E. Adéníran, A. Hansen, **K. T. Pineda**, T. Adamson, S. Thompson, R. Ramnauth, M. Vázquez, & B. Scassellati. (2021). *Challenges Deploying Robots During a Pandemic: An Effort to Fight Social Isolation Among Children.* In proceedings of the 2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI '21). March 8–11, 2021, Boulder, CO, USA.

Preprints

[M-1]. **K. T. Pineda,** A. Mahmood, & C. M. Huang. *"You Might Like It": How People Respond to Small Talk in Human-Robot Collaboration. I*n: *arXiv preprint arXiv:2312.07454* (2023). [Under Review]

[M-2]. **K. T. Pineda,** E. Brown, & C. M. Huang. *"See You Later, Alligator": Impacts of Robot Small Talk on Task, Rapport, and Interaction Dynamics in Human-Robot Collaboration*. [Under Review]

PERSONAL AWARDS

Robotics Science and Systems (RSS) Inclusion Fellow 2022
Johns Hopkins Computer Science Departmental Fellowship 2021 – 2022
Howard and Jacqueline Chertkof Endowed Fellowship 2021 – 2022
Science, Technology and Research Scholars (STARS) II Program 2019 – 2021
Alan S. Tetelman 1958 Fellowship for International Research in the Sciences 2019
Science, Technology and Research Scholars (STARS) I Summer Program 2018
Science, Technology and Research Scholars (STARS) I Program 2017 – 2018

TEACHING EXPERIENCE

Computer Science Teaching Assistant, Baltimore, MD Fall '22, Fall '23, Fall '24
EN.601.490/690 Human-Computer Interaction
- Held weekly office hours, graded assignments, and facilitated in-class exercises
- Prepared and gave a course lecture regarding empirical studies in human-AI interaction

Computer Science Learning Assistant, New Haven, CT
CPSC 470/570 Artificial Intelligence TA Spring '22
- Held weekly remote office hours, graded assignments, and attended weekly staff meetings
- Prepared and gave a course lecture and led the in-person final exam review session

CPSC 223 Data Structures Undergraduate Learning Assistant (ULA) Spring '20
- Held evening office hours to assist students with their programming problem sets
- Attended weekly staff meetings with the course instructor and other ULAs to discuss course material

Science and Quantitative Reasoning Tutoring Program, New Haven, CT Fall '20
CPSC 223 Data Structures Peer Tutor
- Held 1-1 tutoring sessions with students to review course concepts and prepare for exams

SERVICE

Organizer for RSS 2022 Workshop 01/2022 – 07/2022

Johns Hopkins LCSR Graduate Student Association, Baltimore, MD
President 01/2024 – Present

Johns Hopkins Computer Science Graduate Student Council, Baltimore, MD 04/2022 – Present
Social Committee

SKILLS

Programming: Python (PyTorch), C, C++, R, MATLAB, LaTex, Git, Linux Commands
Software: ROS, Gazebo, Rviz, JMP, MAXQDA, AutoCAD, Unity, Adobe Illustrator
Hardware: Franka Research 3, Kinova Gen3, UR5, Pupil Labs Invisible (gaze tracking), Arduino