

Prithwish Dan

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EDUCATION

Cornell University

Master of Science in Computer Science

Ithaca, NY

Expected Graduation: May 2026

- Advisor: Sanjiban Choudhury - Machine Learning, Robotics, Imitation Learning

Cornell University

Bachelor of Science in Computer Science, GPA - 4.135 (Summa Cum Laude)

Ithaca, NY

Aug. 2020 - May 2024

- Coursework: Computer Vision, Robot Learning, Large-Scale Machine Learning, Operating Systems, Analysis of Algorithms

PUBLICATIONS

1) One-Shot Imitation under Mismatched Execution

CoRL 2024

*Prithwish Dan**, *Kushal Kedia**, and *Sanjiban Choudhury*

In Submission

- Developed novel framework to align visual representations for cross-embodiment imitation learning using optimal transport
- Outperformed prior works by 50%+ in task completion rate across datasets with different levels of embodiment mismatch

2) MOSAIC: A Modular System for Assistive and Interactive Cooking

CoRL 2024

Yuki Wang, *Kushal Kedia*, *Juntao Ren*, *Prithwish Dan*, et al., and *Sanjiban Choudhury*

In Submission

- Developed a modular architecture for coordinating multiple robots to interact and collaborate with users in the kitchen
- Won best paper award @ VLNMN WORKSHOP and best poster award @ MoMA WORKSHOP

3) InteRACT: Transformer Models for Human Intent Prediction Conditioned on Robot Actions

ICRA 2024

Kushal Kedia, *Atiksh Bhardwaj*, *Prithwish Dan*, and *Sanjiban Choudhury*

Accepted

- Implemented novel algorithm to predict human intent conditioned on robot actions for collaborative manipulation
- Reduced forecasting errors by 2x for 3 human-robot tasks by pre-training on large-scale human-human activity data

4) ManiCast: Collaborative Manipulation with Cost-Aware Human Forecasting

CoRL 2023

Kushal Kedia, *Prithwish Dan*, *Atiksh Bhardwaj*, and *Sanjiban Choudhury*

Accepted

- Formulated new learning objective to learn cost-aware human motion forecasts for human-robot interactions
- Improved downstream planning metrics such as reaction time and time-to-goal by over 25% relative to baselines

5) A Game-Theoretic Framework for Joint Forecasting and Planning

IROS 2023

Kushal Kedia, *Prithwish Dan*, and *Sanjiban Choudhury*

Accepted

- Proposed method to jointly train a forecaster and planner to encourage safer autonomous planning in crowd settings

EXPERIENCE

PoRTaL Lab

Ithaca, NY

Machine Learning/Robotics Researcher

Jan. 2023 – Present

- Leading research initiatives to leverage visual human demonstrations for long-horizon imitation learning, incorporating large-scale foundation models to reduce robot tele-operation requirements using deep learning and computer vision
- Building novel human intent prediction frameworks in PyTorch and ROS to enable seamless human-robot collaboration
- Proposing and developing affordable real-time human motion forecasting setups in an effort to safely deploy home robots

MongoDB - SF

San Francisco, CA

Software Engineering Intern

June 2024 – Present

- Building Key Management System using Java backend to enable secure Cloud data encryption via private API endpoints

MongoDB - NYC

New York City, NY

Software Engineering Intern

June 2023 – Aug. 2023

- Implemented novel slot-based query execution algorithm in C++ for MongoDB's full-text search feature, achieving 40%+ increased speeds and 10x reduced memory usage, providing users with improved database experiences
- Collaborated cross-functionally with core server and cloud teams to ensure efficient data transfer in query pipelines

AWARDS

Merrill Presidential Scholar 2024

[Webpage](#)

- Honors Top 1% of all Cornell undergraduates in academic achievement and leadership

CRA Outstanding Undergraduate Researcher 2024 - Honorable Mention

[Webpage](#)

- Recognizes top undergraduates across North America with outstanding research potential in a computational field

TECHNICAL SKILLS

Languages: Python, C/C++, Java, OCaml, JavaScript/TypeScript

Frameworks/Technologies: PyTorch, OpenCV, NumPy, Tensorboard, Pandas, ROS, JUnit, Flask, React, Bazel

Developer Tools: Git, Linux/Unix, Windows, VSCode, JetBrains, Postman

ADDITIONAL EXPERIENCE

Cornell Bowers CIS

Ithaca, NY

Teaching Assistant

Jan. 2022 – Present

- Holding office hours, review sessions, grading exams/assignments, and leading discussion sections for courses in Robot Learning, Data Structures & Functional Programming and Analysis of Algorithms to assist CS students (400+ students)

Cornell Cup Robotics

Ithaca, NY

C1C0 CS Systems Lead/Path Planning Lead & Software Engineer

Sept. 2021 – Dec. 2022

- Led a group of 15+ Software Engineers, facilitating seamless integration of chatbot with facial recognition and path planning
- Spearheaded a team of engineers in path planning for a semi-autonomous lab assistant robot leveraging A* search
- Integrated indoor GPS and LiDAR sensors through a server-client architecture, unifying path planning and locomotion

Northwestern Mutual

Milwaukee, WI

Software Engineering Intern

June 2022 – Aug. 2022

- Worked in an Agile environment to develop components of the content factory pipeline in order to modernize document handling in the life insurance market with e-delivery across all 50 states
- Migrated test cases from 100+ repositories into a Zero Touch Quality Assurance automated testing infrastructure

SUNY Polytechnic Institute

Albany, NY

Neuromorphic Computing Research Intern

June 2021 – August 2021

- Produced an image recognition demo application of In-Memory Vector-Matrix Multiplication achieving over 95% accuracy, inspired by AprilTags
- Researched resistive memory devices and their applications in high speed non-Von Neumann technologies
- Designed and built a GUI in Python to optimize microcontroller-to-memristor communication

PROJECTS

Munchkey! | Java, libgdx, box2d

- Led architectural designs and game development for a team of 4 programmers and 6 designers using libgdx and box2d
- Won audience vote for best desktop game in the GDIAC 2023 showcase

Show Tracker App | Python, Flask, SQL, Heroku, Docker, Postman

- Collaborated with a team of 5 developers to design a backend infrastructure with a relational database and deploy a RESTful API with 10+ HTTP routes for a show-tracking iOS application
- Received an honorable mention for Best Backend out of 25 teams in the Cornell AppDev Hackathon

Reddit Analysis Tool (NLP/ML) | OCaml, OUnit2, OWL

- Developed a system to analyze subreddits on the Reddit platform, generating text-based prediction algorithms and information using Natural Language Processing and Machine Learning techniques
- Made Reddit API requests to retrieve necessary subreddit information for analysis, including text and upvotes