Michal Staniaszek

m.staniaszek@gmail.com github.com/heuristicus

Experience

DPhil Candidate at GOALS Group, Oxford Robotics Institute, University of Oxford, Oxford, UK — Oct 2022 to Present

- Analysed methods of integrating time into planning with Markov Decision Processes (MDPs).
- Ran long-term deployments of Spot, including with the UK Atomic Energy Authority at the JET fusion reactor.
- Consulted for external companies to help them use our autonomy system in practical applications.
- Built more user-friendly internal tools to make building and simulation of MDPs simpler.
- Engaged in public outreach, including operating Spot during the 2023 Royal Institution Christmas Lectures.

Robotics Software Engineer at Oxford Robotics Institute, University of Oxford, Oxford, UK — Nov 2019 to Oct 2022

- Lead developer on robot-agnostic autonomy system used across the institute on Spot, Scitos X3, HSR, and Jackal.
- Responsible for integration of hardware and software capabilities on Spot. Improved the spot_ros package.
- Refined internal Spot risk assessment and developed additional safety software and hardware with the hardware team.
- Ran trials and demonstrations of Spot to the public, project funders, and industry, including nuclear and construction.
- Assisted development on the *Frontier* mapping device, integrating onto robots and automating software setup.
- Created procman_ros, porting the existing distributed process manager package to ROS and GTK3+.

Research Assistant at Vision For Robotics Group, Technische Universität Wien, Vienna, Austria — Jun 2017 to Jan 2019

- PhD candidate and teaching assistant, working on semantic segmentation and mapping for long-term robot autonomy.
- Reviewed literature on 3d segmentation and SLAM, evaluated performance of various state of the art algorithms.

STRANDS Project Research Associate at University of Birmingham, Birmingham, UK — Oct 2016 to May 2017

- On-site support for robot deployment, assisting project partners setting up and debugging their code on the Scitos G5.
- General linux hardware and software support, network configuration and status monitoring.
- Created RViz tools and panels to display and quickly and easily modify the graph-based autonomy system.
- Implemented scripts for robot startup and easier creation of task routines for long-term autonomy.
- Improved software package documentation, scripted aggregation of documentation from all project repositories.

Innovation Team Intern at Yujin Robot Co., Ltd, Seoul, Republic of Korea — Jul 2015 to Jan 2016

- Co-design and implementation of the py_trees package and visualisation, now a popular Python behaviour tree library.
- Behaviour design, diagnostics, simulation layer implementation, and module interfacing in ROS for the GoCart robot.
- Helped with ROS integration of web interface packages for robot control using REST and Celery.
- Contributed to open source ROS packages diagnostic_aggregator and audio_common.

Education

DPhil Engineering Science, Oxford Robotics Institute — Oct 2022 to Present
Keble College, University of Oxford, Oxford, UK
Research focus: *Long-Horizon Temporal Planning Under Uncertainty for Industrial Robotics*

MSc Systems, Control and Robotics, Robotics and Autonomous Systems track — Aug 2013 to Jun 2015
KTH Royal Institute of Technology, Stockholm, Sweden
Thesis: *Feature-Feature Matching for Object Retrieval in Point Clouds*

BSc (Hons) Computer Science with Study Abroad, First Class Honours — Sep 2009 to Jun 2013
University of Birmingham, Birmingham, UK
Thesis: *Time Delay Estimation in Gravitationally Lensed Photon Streams*
Study abroad: **Japanese Language Programme**, Keio University, Tokyo, Japan

Publications

Staniaszek, Brudermüller, Bhattacharyya, Lacerda, Hawes. *Difficulty-aware Time-Bounded Planning Under Uncertainty for Large-Scale Robot Missions.* ECMR — July 2023

Street, Lacerda, **Staniaszek**, Mühlig, Hawes. *Context-Aware Modelling for Multi-Robot Systems Under Uncertainty.* AAMAS — May 2022

Community and Civil Society

Welfare Officer for Keble College Middle Common Room — Jul 2023 to Present
- Organised welfare events for Keble's graduate community, including weekly brunch event attended by over 40 people

Presiding Officer for Oxford City Council Elections — May 2021
- Responsible for running a polling station on election day, including security of the ballot.
- Collected ballot boxes, set up the station, provided ballots to voters, answered questions about voting process.

Assistant Observer at Democracy Volunteers — May 2019 to Jan 2021
- Accredited observer for local and general elections in the UK, Belgium, Netherlands, and USA.
- Attended polling stations on election day and recorded conformity with best practice for elections.

Warehouse Volunteer at Fareshare London — Apr 2019 to Nov 2019
- Categorised and arranged incoming food in the warehouse, gathered food orders for distribution to charities.

Teaching

Teaching Assistant at Vision for Robotics Group, Technische Universität Wien — Jun 2017 to Jan 2019
- Administered the Masters' *Machine Vision and Cognitive Robotics* and Bachelors' *Robotics and Computer Vision* courses.
- Updated and maintained assignment content, managed tutors, graded assignments, and provided assistance to students.

Robot Programming Demonstrator at University of Birmingham — Jan 2017 to Apr 2017
- Discussed theoretical and software problems with students to help them understand the AI concepts being taught.
- Helped students work together as teams to complete assignments, and graded them based on live demonstrations.

Scholarships and Awards

Computer Science Prize & Research Committee Project Prize at University of Birmingham — Jul 2013
- School of Computer Science award for the top final year student, and best research project thesis.

Nuffield Undergraduate Research Bursary at University of Birmingham — Jul 2011
- Bursary to support a summer research project to investigate particle filter localisation for AUVs.

Programming and Software

Python, ROS, git, Linux, bash, C++, LaTeX

Public repositories at github.com/heuristicus

Languages

English (native), Japanese (good), Polish (good)
German (basic)