Martin Matak

Postdoctoral Researcher at the University of Utah

https://martinmatak.github.io

EDUCATION

University of Utah

PhD in Computer Science — Aug 2019 – December 2024

- Advised by Tucker Hermans
- Focused on dexterous grasping and manipulation

Vienna University of Technology / TU Wien (Austria)

MSc in Computational Intelligence / Logic and Computation — Oct 2016 – June 2019

- Advised by Georg Weissenbacher
- Thesis: *Attacks against Neural Networks* [PDF]

University of Zagreb, Faculty of Electrical Engineering and Computing (Croatia)

BSc in Computer Science — Sep 2013 – Jul 2016

- Thesis: *Data Processing with Technology Apache Spark*

WORK EXPERIENCE

University of Utah

Postdoctoral Researcher — Jan 2025 –

- Scaling up robot grasping from my PhD work

NVIDIA, Seattle, US

Research Scientist Intern at Seattle Robotics Lab — May 2022 – May 2024

- Combining RL+distillation with safe low-level control for dexterous grasping.

Deloitte Digital, Vienna, Austria

Analyst (Software developer) — May 2018 – July 2019

- Part of the team that developed a loyalty program used by multiple grocery stores and gas stations. This included frequent meetings with the customer.
- Worked on the backend side (Java, Oracle)

Austrian Institute of Technology (AIT), Vienna, Austria

Data Science Intern — Oct 2017 – Feb 2018

- Investigated linkability of *monero* cryptocurrency (Scala, Google Cloud).

CROZ d.o.o., Zagreb, Croatia

Software Engineering Intern — Jul 2016 – Oct 2016

- Worked on graph search through natural language (Croatian).

PUBLICATIONS

- "DextrAH-G: Pixels-to-Action Dexterous Arm-Hand Grasping with Geometric Fabrics" [website]
  Martin Matak*, Tyler Ga Wei Lum*, Viktor Makoviychuk, Ankur Handa, Tucker Hermans, Nathan D. Ratliff, Karl Van Wyk
  Conference on Robot Learning (CoRL) 2024
- "23 DoF Grasping Policies from a Raw Point Cloud" [PDF]
  Martin Matak, Karl Van Wyk, Tucker Hermans

IEEE International Conference on Robotics and Automation (ICRA) Workshop on Geometric Representations 2023

- "Planning Visual-Tactile Precision Grasps via Complementary Use of Vision and Touch" [PDF]
  Martin Matak and Tucker Hermans
  IEEE Robotics and Automation Letters (RA-L) 2022
- "Comparing Piezoresistive Substrates for Tactile Sensing in Dexterous Hands" [PDF]
  Rebecca Miles, Martin Matak, Mohanraj Devendran Shanthi, Darrin Young, Tucker Hermans
  Preprint
- "Learning Continuous 3D Reconstructions for Geometrically Aware Grasping" [PDF]
  Mark Van der Merwe, Qingkai Lu, Balakumar Sundaralingam, Martin Matak, Tucker Hermans
  IEEE International Conference on Robotics and Automation (ICRA) 2020