

Ignat Georgiev

PhD in Robot Learning at Georgia Tech

I am a young scientist with a passion for robot learning; advised by Animesh Garg. My deeply seeded belief is that the future of robotics is in data-driven fully differentiable approaches. I am particularly interested in deep learning for decision-making, aiming to create intelligent robots akin to science fiction ones.

Work Experience

Applied Scientist

Oxbotica, UK

2021 - 2022

- ✓ Researched data-driven methods for generating adversarial scenarios for autonomous vehicles to accelerate edge-case scenarios in the product [MetaDriver](#)
- ✓ My work focuses on creating adversarial agents using model-free and model-based RL, representation learning from high-dim data, and meta-learning
- ✓ Worked with Python, PyTorch, and large-scale clusters and distributed training

Research Engineer

Kopernikus Automotive, Germany

2020 - 2021

- ✓ Worked on autonomous valet parking product based on external cameras
- ✓ Researched and developed a hybrid path planning system for parking combining random sampling and numerical optimization in Rust and C++
- ✓ Successfully led a project to integrate with 5 OEMs and [demo product at IAA](#)

Founder & AI Team Lead

Edinburgh University Formula Student, UK

2017 - 2020

- ✓ Founded and led a student project to develop an [autonomous racecar](#)
- ✓ The team won 2 international competitions and raised a budget of over £70,000
- ✓ [Architected and led the development of the AV stack with ROS / C++ / Python](#)
- ✓ Planned and organised the development of DL camera/lidar object detection, multi-sensor EKF, particle filter SLAM, elastic band path planning, MPC, functional safety, software integration, CI/CD, and a custom Gazebo simulation
- ✓ Worked on end-to-end autonomous driving from camera images with deep RL

Education

PhD Machine Learning

Georgia Institute of Technology, USA

2022 - current

MSc Robotics and Artificial Intelligence

The University of Edinburgh, UK

2015 - 2020

- ✓ First-Class Honours (4.0 GPA)
- ✓ Focus on linear algebra, probability, robotics, ML, RL, and optimal control
- ✓ Thesis: Adaptive Motion Control for Autonomous Racing

Publications

[Learning Optimal Policies Through Contact in Differentiable Simulation](#)

I. Georgiev, *additional authors omitted due to review process*
Submitted to Transactions in Machine Learning (TMLR), 2023

[Iterative Semi-Parametric Dynamics Model Learning for Autonomous Racing](#)

I. Georgiev, C. Chatzikomis, T. Volkl, J. Smith and Michael Mistry
Conference on Robot Learning (CoRL), 2020

Contact Details

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GitHub: [imgeorgiev](https://github.com/imgeorgiev)

Technical skills

Python

PyTorch

CUDA

C++ (11/14/17)

Rust

ROS & ROS2

Unix / Linux / bash

Git / Gitlab CI / Jenkins

Robot simulators

Algorithms & Structures

Distributed & Concurrent systems

Data Science & Visualization

Professional Skills

Analytical thinking

Teamwork

Project Management

Leadership

Empowering others

Honours & Awards

Inspirational Graduate

Best Robotics Thesis

Student Employee of the Year