

Ignat Georgiev

PhD in Robot Learning at Georgia Tech

I am a young scientist advised by Animesh Garg with a passion for robot learning. 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.

My current research focuses on adaptive horizon model-based RL using model confidence and gradient variance. My work aims to bridge the learning efficiency gap between MB and MF RL, ultimately leading to more effective robot learning..

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

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

C++ (11/14/17)

Rust

Python

PyTorch

CUDA

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