

# Ignat Georgiev

## PhD in Robot Learning at Georgia Tech

I am a scientist/engineer passionate about robot learning; advised by Animesh Garg. My deeply seeded belief is that the future of robotics is in large data-driven differentiable approaches. My recent research has focused on RL, world models and first-order optimization. I am now interested in scaling these foundations to large multi-task models and applying them to real practical robot applications.

### Selected Publications

#### [PWM: Policy Learning with Large World Models](#)

Ignat Georgiev, *additional authors omitted due to review process*  
Submitted, Conference on Neural Information Processing Systems (NeurIPS), 2024

#### [Adaptive Horizon Actor-Critic for Policy Learning in Differentiable Simulation](#)

Ignat Georgiev, Krishnan Srinivasan, Jie Xu, Eric Heiden, and Animesh Garg  
International Conference on Machine Learning (ICML), 2024

### Work Experience

#### Intern

*The AI Institute, USA* Aug - Dec 2024

- Research on multi-task world model policies for real-world dexterous manipulation

#### Applied Scientist

*Oxbotica, UK* 2021 - 2022

- Researched data-driven methods for generating adversarial scenarios for autonomous vehicles to accelerate edge-case scenarios in the [MetaDriver product](#)
- 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](#)

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

### 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

### Honors & Awards

Inspirational Graduate  
Best Robotics Thesis  
Student Employee of the Year