Ignat Georgiev 🤖

PhD in Robot Learning at Georgia Tech

I'm a research scientist passionate about advancing robot learning with large data-driven, differentiable approaches. Advised by **Animesh Garg**, I specialize in Reinforcement Learning (**RL**), Behavioral Cloning (**BC**), large **world models**, and first-order **optimization**, with a focus on dexterous manipulation.

Recently, my work has explored scaling up **large vision-based world models** trained on play data, enabling online planning with first-order methods on out-of-distribution tasks. I am excited to bring this expertise to **research roles starting Q1 2025**.

Selected Publications

PWM: Policy Learning with Multi-task World Models
Ignat Georgiev, Varun Giridhar, Nicklas Hansen, and Animesh Garg
International Conference on Learning Representations (ICLR), 2025

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

Research 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
• Developed adversarial agents using RL and meta-learninig for edge-case scenario discovery for autonomous vehicles as part of the MetaDriver product
• My work focused on model-free and model-based RL, representation learning from high dimensional 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
• Designed 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* 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 - present

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

Technical skills

Python
PyTorch
C++ (11/14/17)
Rust
ROS / ROS2
Reinforcement Learning (RL)
Behaviour Cloning (BC)
World Models
Distributed Training
Differentiable Simulations
ML Infrastructure
Optimization Methods

Professional Skills

Cutting-edge Research
Algorithm Design
Teamwork
Project Management
Leadership

Honors & Awards

Inspirational Graduate
Best Robotics Thesis
Student Employee of the Year