

Dr. Batu Aytemiz

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Education

- **Ph.D. in Computational Media with a focus on Machine Learning** **Santa Cruz, CA, USA**
University of California, Santa Cruz 2017–2022
Dissertation Title: [Design Out Helplessness: AI Interventions in Game Inclusivity](#)
- **B.S. in Computer Science, Cum Laude** **Abu Dhabi, UAE**
New York University Abu Dhabi 2013–2017
Minor in Game Design

Experience

- **Machine Learning Engineer** **Menlo Park, CA, USA**
Fundamental Research Labs March 2025 – Current
 - Shipped a multi-agent, goal-driven LLM conversation system for a Roblox game with 10k DAU, including central orchestration for avatar-based chat agents.
 - Designed and deployed a fully automated user research pipeline with data sanitization, summarization, and dashboard/report generation to inform design and monetization.
 - Built automated behavior evaluation system using both handcrafted scenarios and LLM-driven persona simulations to detect unsafe or substandard conversational agent behavior.
 - Profiled and optimized LLM cost-performance tradeoffs by identifying high-cost callsites and implementing smart caching.
 - Set engineering standards around typing, linting, and automated PR review; led adoption of in-house AI developer tooling to improve code quality and team velocity.
- **Machine Learning Engineer** **San Francisco, CA, USA**
Regression.gg July 2024 – March 2024
 - Built LLM pipelines for agent behavior code generation using RAG and human-in-the-loop feedback, with static analysis, enabling narrow automated testing bots.
 - Developed visual LLM capabilities for gameplay video summarization and object detection with bounding boxes, enabling LLM-driven interaction with game content.
 - Designed custom annotation tools and data collection pipelines for creating high-quality datasets across multiple game environments, enabling rapid experimentation and LLM fine-tuning.
 - Built an LLM experimentation pipeline with automated error classification that informed the direction of AI engineering.
- **Research Scientist** **San Francisco, CA, USA**
Agentic.ai, working with Stewart Miles and Nathan Martz May 2022 – March 2024
 - Selectively identified, explored, and assessed several research directions such as goal conditioning-based hierarchical architectures, residual policies that made use of pre-existing scripted behaviors and offline reinforcement learning.
 - Measured and improved the latency of our interactive imitation learning framework that delivers agents to the user within minutes by optimizing the compilation and training time of our tensorflow based models.
 - Led development of a unified experimentation pipeline for reproducibility and team-wide adoption.
 - Implemented uncertainty quantification to better communicate the state of our agents to the users and explored different interface options to improve the user experience of using our service.
- **AI Research Intern** **Cambridge, UK**
Game Intelligence Lab, Microsoft Research, working with Sam Devlin September 2020 – December 2020
 - Investigated how Reinforcement Learning techniques can be better adapted for the game development industry, by exploring interactive reinforcement learning workflows, resulting in the paper [Designer Centered Reinforcement Learning](#).
 - Worked on fine-tuning RL agents learning through preferences to allow designers to specify aesthetic concerns.
- **AI Engineering Intern** **Montreal, Canada**
La Forge, Ubisoft Montreal, working with Olivier Delalleau May 2019 – September 2019
 - Project formed the foundation of the paper [Deep Reinforcement Learning for Navigation in AAA Games](#).
 - Used Reinforcement Learning techniques to train agents that can navigate static environments without the need for a navigation mesh, while utilizing complex physics-based movement with the end goal of automated testing large-scale games.