

John Banister Lanier

Irvine, California 92612 | (205) 994-0128 | johnblanier@gmail.com

<https://jblanier.net>

Computer science M.S. graduate with research experience in deep reinforcement learning and proficiency in software engineering.

WORK EXPERIENCE

Institute for Genomics and Bioinformatics, UC Irvine, California
Graduate Researcher in Artificial Intelligence, (01/2018)-Present

Designed novel deep reinforcement learning algorithms to solve sparse reward goal-oriented robotics environments. Developed large-scale distributed deep reinforcement learning applications with Tensorflow. Created online multi-agent reinforcement learning environment framework for competitions and research. Currently developing methods for deep reinforcement learning in difficult imperfect-information, zero-sum games.

Novacoast, Inc., Santa Barbara, California
Software Engineering Intern, (06/2017)-(09/2017)

Developed full-stack PKI management system with multiple microservices to enable key management and distribution to untrusted environments with secure and fault tolerant transfer and storage. Frontend developed with Ruby on Rails, backend applications in Java with MongoDB and PostgreSQL. Designed NoSQL database model. Microservices managed with Docker.

Four Eyes Lab, UC Santa Barbara, California
Undergraduate Researcher in Augmented Reality, (01/2017)-(06/2017)

Developed HoloLens augmented reality real-time object-annotation application. Created streaming solution for server-side inference using convolutional neural networks to detect and label objects in client device's field of view. 2D labels are projected as 3D annotations alongside respective real-world objects by raycasting virtual image positions onto the HoloLens's spatial map. Server application developed in C, HoloLens application developed in C# with Unity game engine.

PUBLICATIONS

Lanier, J.B., McAleer, S., & Baldi, P. (2019). *Curiosity-Driven Multi-Criteria Hindsight Experience Replay*. NeurIPS 2019 Deep RL Workshop. <http://arxiv.org/abs/1906.03710>

Shmakov A., Lanier, J.B., McAleer, S., Archar R., Lopes C., & Baldi, P. (2019). *ColosseumRL: A Framework for Multiagent Reinforcement Learning in N-Player Games*. COMARL AAAI 2020. <https://arxiv.org/abs/1912.04451>

TECHNICAL SKILLS

- **Languages:** Python | Java | Javascript | C | C++ | C# | Ruby | HTML | CSS | SQL
- **Platforms/APIs:** Tensorflow | PyTorch | Jupyter Notebook | Git | Docker | Linux | MongoDB | Node.js | Ruby on Rails | Unity | Unreal Engine
- **Machine Learning Skills:** Deep Reinforcement Learning | Implementing state of the art ML publications | Developing scalable high performance deep learning software | Designing novel ML methods
- **Additional Software Development Skills:** Full-stack web development | Android app development

EDUCATION

M.S. Computer Science, 2019, University of California Irvine, GPA 3.946

B.S. Computer Science, 2017, University of California Santa Barbara, GPA 3.70