AARUN SRINIVAS

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PROFESSIONAL EXPERIENCE

MONEYGRAM **Remote**

Lead Machine Learning Engineer **Jan 2023 - Present**

- Built a chatbot utilizing LlamaIndex and Vertex AI's chat-bison LLM, which incorporates RAG + Recursive Retrieval to minimize hallucinations and answer FAQs for MoneyGram agents, generating cost savings upwards of 3 million dollars per year
- Experimented with GPT-J, GPT-NeoX, and T5 LLMs, Reinforcement Learning with Human Feedback, and Direct Preference Optimization with Parameter Efficient Fine-Tuning and DeepSpeed to train a cost-effective customer representative chatbot
- Trained HuggingFace YOLO and TrOCR models to detect and extract MICR Strip and Account and Check Numbers from Money Orders and Official Checks with 94% accuracy, eliminating the need for business to manually enter the data of approximately 940,000 checks each year

GEORGIA INSTITUTE OF TECHNOLOGY **Atlanta, GA**

Graduate Research Assistant at Entertainment Intelligence Lab **Aug 2021 - Aug 2022**

- Crafted a dense reward function that trains a reinforcement learning agent to pick up health and ammo packs as well as face and shoot enemies to beat DARPA's implementation of VizDoom
- Implemented a series of OpenAI Gym Wrappers that wrap and inject novelties into MiniGrid at a specified episode to construct NovGrid, a sandbox environment used to demonstrate the effectiveness of game cloning and imagination-based retraining

GEORGIA INSTITUTE OF TECHNOLOGY **Atlanta, GA**

Undergraduate Research Assistant at Aerospace Systems Design Lab **Jan 2020 - Aug 2020**

- Developed an Intelligent Battle Manager for AFRL capable of allocating missiles, aircraft, and other military resources to handle incoming threats from various hostile air and ground units
- Explored Policy Gradient Reinforcement Learning methods such as REINFORCE and A2C by implementing them with TensorFlow and observing their performance on multiple benchmark environments to demonstrate their efficacy for future endeavors

EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY **Atlanta, GA**

Master of Science in Computer Science **Jan 2022 - Aug 2022**

- Specialization in Machine Learning

Bachelor of Science in Computer Science **Aug 2019 - Dec 2021**

SKILLS

- Programming: Python, Java, JavaScript, TypeScript, C
- Data Science Packages: NumPy, Pandas, Scikit-Learn, XGBoost, OpenCV, Matplotlib, Seaborn, Plotly
- Cloud Platforms: Google Cloud Platform, Amazon Web Services, IBM Watson
- MLOps: Vertex AI, Tensorboard, Weights & Biases, KubeFlow, Kubernetes, Docker
- ML Technologies: PyTorch, PyTorch Lightning, Tensorflow, HuggingFace, Spark

PUBLICATIONS

- Jonathan C Balloch, Zhiyu Lin, Mustafa Hussain, Aarun Srinivas, Xiangyu Peng, Julia Kim, and Mark Riedl. 2022. NovGrid: A Flexible Grid World for Evaluating Agent Response to Novelty. In *In Proceedings of AAAI Symposium, Designing Artificial Intelligence for Open Worlds*.
- Jonathan Balloch, Zhiyu Lin, Robert Wright, Xiangyu Peng, Mustafa Hussain, Aarun Srinivas, Julia Kim, Mark O. Riedl. 2023. Neuro-Symbolic World Models for Adapting to Open World Novelty. In *Proceedings of the 2023 International Conference on Autonomous Agents and Multiagent Systems*.