Ian Snyder

West Chester, PA 19380 (Open to Remote/Relocation) (610) 425-8249 | idsnyder136@gmail.com
linkedin.com/in/ian-snyder-aa1600182 | github.com/iansnyder333 **Portfolio:** iansnyder333.github.io/frontend/

EDUCATION

Pittsburgh, PA **University of Pittsburgh** **Aug 2019- May 2023**

Major | Computational Biology , B.S GPA: 3.2
Minor | Applied Statistics
Programming Coursework: Machine Learning Modeling and Simulations, Data Science, Advanced Algorithms
Statistics Coursework: Applied Regression, Nonparametric Statistics, Categorical Data Analysis, Discrete Mathematics

TECHNICAL SKILLS

Languages: (*advanced*): Python, Java (*proficient*): C++, R (*familiar*): Javascript, C
Tools: PyTorch, Tensorflow, Pandas, NumPy, Scikit-Learn, Slurm
Database & Cloud: MySQL, SQLite, Neo4j Cypher, AWS Elastic Beanstalk
Machine Learning: Hugging Face Transformers, PEFT, Cross Validation, Logistic Regression, Natural Language Processing

EXPERIENCE

Machine Learning Researcher | Carnegie Mellon-UPMC De Novo Drug Design Oct 2019 - Sep 2020

Department of Computational & Systems Biology, Koes Group Directed Research **Python | PyTorch | R | Slurm**

- Leveraged GNINA open-source frameworks to engineer sophisticated deep learning algorithms for advanced structure-based drug design, refining and perfecting **industry-leading deep convolutional neural network models** for precise low RMSD pose predictions.
- Executed cross validation procedures to verify and enhance the neural network, adeptly training a comprehensive ensemble of deep learning models, signifying a scalable enhancement in performance
- Key contributor in the **development of the group's top-performing model, delivering over a 10% reduction in RMSE via a quintet ensemble model**, warranting co-authorship on the associated academic publication

Publication: "Three-Dimensional Convolutional Neural Networks and a Cross-Docked Data Set for Structure-Based Drug Design," Journal of Chemical Information and Modeling, 2020

PROJECTS

NLP Summarization & Article Generation Flan-T5 | GPT | PEFT | HuggingFace

- Fine-tuned an 880M parameter Flan-T5 Large model using PEFT with LORA on a T4 GPU, achieving a **Rouge-1 score of 50; optimized to run on consumer hardware**
- Built a **GPT model from scratch following OpenAI's GPT-3 specifications**; fine-tuned for generating realistic news articles and headlines
- Demonstrated innovative use of **PEFT technology to create state-of-the-art NLP solutions without supercomputers**
- Leveraged Streamlit to design a **user-friendly and web-friendly interface**, enabling seamless user access and interaction with the models.
- **Source & Demo**: github.com/iansnyder333/FakeNews-GPT_Project

Snake Game Intelligent Agent App Python | PyTorch | PyGame | NumPy

- Engineered an advanced Snake Game Application utilizing Pygame, featuring a **sophisticated Intelligent Agent powered by Deep Q-Learning** through the PyTorch framework
- Crafted an engaging and interactive experience for users, offering multiple difficulty levels, AI gameplay demonstrations, and the opportunity to train, visualize, and save their own models, enhancing user engagement and understanding
- Seamlessly **integrated and abstracted the application's full suite of features within an intuitive, custom-built GUI**, ensuring effortless accessibility and an exceptional user experience for clients
- **Source & Demo**: github.com/iansnyder333/ai-game

CERTIFICATIONS

Deep Learning Specialization | *DeepLearning.AI* **Jul 2023**
Machine Learning Specialization | *Stanford University* **Jun 2023**