Clark Peng

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Education

Sage Ridge School Reno, NV

GPA: 3.98/4 January 2021-June 2024

Senior Thesis: Why AGI is not Near Emergence : Limitations in Current AI Methods

UCLA Los Angeles, CA

Technical Skills

Programming Languages: Python, Java, C#, C++, Git; **Tools:** Pandas/Polars, Numpy, Pytorch, Tensorflow, Unity

Papers

- Peng, C., & Dinçer, T. (2024). *Event Detection via Probability Density Function Regression* [Preprint]. ArXiv Preprints. https://doi.org/10.48550/arXiv.2408.12792

Research Experience

REU Site at UNR (University of Nevada Reno) Reno, NV

Student Researcher June 2023-July 2023

- Conducted research on fire/smoke detection using aerial cameras, collaborating with university researchers and undergraduates. Developed skills in reading and comprehending research papers.
- Experimented with various hyperparameters to enhance DETR model performance, gained an understanding of the architectural differences between DETR, Faster-RCNN, and YOLO frameworks, and compared their experimental results.

Summer Research Internship Reno, NV

Student Researcher April 2024-May 2024

- Collaborated with UNR professors and PhD, improved early fire/smoke detection capabilities by refactoring codebase to run weakly-supervised DETR (supporting weak/unlabeled data).
- Prepared a new dataset containing 700 new labeled nighttime and daytime data, built an automated pipeline in python to transform data formats.

Work Experience

MIT Beaver Works Summer Institute (BWSI) Cambridge, MA

Teaching Assistant and Curriculum Improvement Role May 2024-Now

- Streamlined machine interface and integrated RL using PPO into the Python codebase. Improved Unity image generation code.
- Assisted 30+ aspiring students in learning the fundamental concepts of RL and CNNs using PyTorch. Introduced how to train physics-based agents with RL via Unity.

Activities

Kaggle

Kaggle Master January 2022-Now

Collaborated with professional ML engineers and student teammates and published numerous high-scoring popular notebooks for many competitions. Notable topics and cumulative metrics include:

- **Time Series Event Detection**: Detecting sleeping intervals (1500+ copies, 320+ upvotes)
- **Image Classification**: Detecting gravitational waves from spectrograms (200+ copies, 90+ upvotes)
- **Graph-Ranking/Regression**: Ranking NN runtimes from their graphs (200+ copies, 70+ upvotes)

Ranked in the top 1% for notebooks and top 5% for competition standings. Multiple awards:

- **Gold Medals**: Awarded for outstanding notebooks.
  Silver and Bronze Medals: Earned for placing high in various competitions.