Ellington Kirby

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In search of a research internship and PhD in Machine Learning Research. Currently enrolled in the IASD Program focused on Machine Learning and AI at PSL Université. Former Software Engineer; workplace experience with machine learning led to a reorientation of my career. Research Interests: Computer Vision, Self Supervised Learning, Generative Models, Multi-Modal Models

EDUCATION

• PSL University   **Paris, France**
Masters in Machine Learning - Artificial Intelligence, Systems, Data (IASD)   *September 2023 - Current*
Courses Include: Convex, Non Convex, Distributed, and Large Scale Optimization; Learning Theory; Online Learning;
Deep Learning for Computer Vision; Large Language Models; Reinforcement Learning Theory; Data Science Project Lab
• Université Paris Dauphine-PSL   **Paris, France**
Masters in Computer Science and Math - Information, Decisions, Data - 15.996 GPA   *September 2022 - May 2023*
• Binghamton University, State University of New York   **Binghamton, NY**
Bachelor of Science in Computer Science   *2012-2016*

RESEARCH EXPERIENCE

Data Driven Trajectory Generation and Extension of Leiden Algorithm for Graph Clustering   *June 2023 - September 2023*
GRETTIA Lab, Univerité Gustave Eiffel, Champs-sur-Marne

- Led literature review of encoder-decoder architectures for Trajectory Synthesis.
- Conducted a thorough analysis of research opportunities in a new massive dataset of vehicle trajectories collected by CIRCLES.
- Prototyped LSTM based sequence models for Trajectory Prediction.
- Developed a modification of the Leiden Algorithm for Ward's Linkage based graph clustering.
- Designed and analyzed experiments showing the proposed algorithm outperformed classical graph clustering methods.

Integration of Structured Knowledge by Specialized Text Synthesis: link   *February 2023*

- Second author on paper where bi-directional language models were fine tuned using Unified Medical Language Systems
- Built pipelines to fine tune and evaluate BERT models on a variety of Biomedical Question Answering Tasks

HearHere: smartphone based audio localization using time difference of arrival: link   *October 2016*

- First author on a demonstration presented at Mobicom 2016
- Analyzed scholarly work on audio ranging to demonstrate an advanced audio localization algorithm in a consumer application

WORK EXPERIENCE

Zenly (Snap Inc.), Software Engineer - Android   **Paris, FR**
Android Engineer on the Conversations Team   *February 2020 - July 2022*

- Built and maintained dozens of new features across the Zenly application, including Voice Notes, Video Messages, Emoji Spam, Link Previews, and many other features, used by tens of millions of users daily.
- New features contributed to a 33% increase in daily Zenly chat usage, scaling to millions of messages sent per day.
- Led low level investigations to reduce first frame draw time of chat application by 20% leading to a smoother user experience.
- Prototyped Deep Learning methods for audio to animated lip sync synthesis
- Zenly received French Research Tax Credit (CIR) for work on animated lip sync generation

FanDuel, Android Engineer   **New York, NY**
Lead Android Engineer at DRAFT, a Fantasy Sports gaming app, later acquired by FanDuel   *October 2017 - January 2020*

- Lead and solo Android Developer on DRAFT fantasy sports app

Prolific Interactive, Android Engineer   **New York, NY**
Mobile Agency   *October 2016 - October 2017*

- Android engineer for multiple projects

Open Source Contributions:

- Rinascimiento Splendor Framework: A framework to train game playing AI on the Splendor board game. Helped with the build system and currently working on new AI strategies.
- Python Tweet Preprocessor: Tool for removing tweet contents from text. Added utilities for file processing.
- LinkedIn LiTr Video Transcoding: Extended fragment shader to allow implementation of video shaders. Created Grayscale shader

SKILLS

Programming Languages: Python, Kotlin, Java, C++, Go, C#
Technologies: PyTorch, Keras, Numpy, Pandas, HF Transformers, Android OS,
Language: English, French (C1)
Personal Interests: Cooking, Guitar, Game Design, Science Fiction and Fantasy literature, exploring France