

Ellington Kirby

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Software Engineer and Machine Learning Researcher with a strong background in AI and computer vision. Seeking a challenging role as a Machine Learning Engineer or Research Engineer to leverage my expertise in generative models and large-scale optimization. Proven track record of adapting to new challenges, solving complex problems, and collaborating effectively in diverse teams.

RESEARCH EXPERIENCE

Research Internship, Valeo AI, Paris, France

April 2024 - September 2024

3D Object Generation with Diffusion from LiDAR Scans

- Using Image-to-Image pre-training to augment 3D understanding of a diffusion model in an autonomous driving setting.
- Deep review of literature on LiDAR generation, 3D Shape generation, 2D to 3D distillation, diffusion applied to supervised tasks.
- Trained large diffusion transformers on multiple GPUs to benchmark against sparse convolutional networks in 3D generation.
- Built LiDAR diffusion in-painting pipeline to establish scene scale generative baseline.
- Collaborated with three other researchers to demonstrate contributions on downstream 3D LiDAR sensing tasks.

Research Internship, GRETIA Lab, Université Gustave Eiffel

June 2023 - September 2023

Extension of Leiden Algorithm for Graph Clustering

- Improved upon classical community detection algorithms in order to identify patterns in urban traffic conditions.
- Developed LSTM and VAE models for trajectory prediction and generation on highway data.

Second Author, Integration of Structured Knowledge by Specialized Text Synthesis: [link](#)

February 2023

- Fine tuning bi-directional language models using Unified Medical Language Systems, CORIA-TALN 2023

First Author, HearHere: smartphone based audio localization using time difference of arrival: [link](#)

October 2016

- Demonstration of on device audio localization algorithm using two microphones, MOBICOM 2016
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WORK EXPERIENCE

Software Engineer - Android

Paris, FR

Snap Inc.

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 leading to French Research Tax Credit.

Software Engineer - Android

New York, NY

FanDuel

October 2017 - January 2020

- Lead development as solo Android Software Engineer on a real time fantasy sports snake drafting game.

Software Engineer - Android

New York, NY

Prolific Interactive Mobile Agency

October 2016 - October 2017

- Android engineer for multiple e-commerce applications including Scotts Miracle Gro and Hibbert Sports
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EDUCATION

Université Paris Dauphine-PSL

Paris, FR

Masters 2 in Machine Learning - Artificial Intelligence, Systems, Data (IASD)

September 2023 - 2024

Ranked third in the promotion.

Université Paris Dauphine-PSL

Paris, FR

Masters 1 in Computer Science and Math - Information, Decisions, Data

September 2022 - May 2023

Binghamton University, State University of New York

Binghamton, NY

Bachelor of Science in Computer Science

2012-2016

OS CONTRIBUTIONS

- [Lidar Scene Completion via Diffusion: LiDiff](#): Contributed enhancement to use GPUs in pre-processing scripts, forked to re-train the model to reconstruct scenes and in-paint new objects.
 - [Rinascimento Splendor Framework](#): Implemented the current top performing algorithm, Monte Carlo Tree Search with RAVE.
 - [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
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SKILLS

Programming Languages: Python, Kotlin, Java, C++, Go, C#

Technologies: PyTorch, Numpy, Pandas, HF Transformers, Diffusers, Android OS

Languages: English, French

Personal Interests: Cooking, Guitar, Game Design, Science Fiction and Fantasy literature, exploring France