CHADY DIMACHKIE

Machine Learning Engineer (open to relocating or remote work)

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EXPERIENCE

Founding Machine Learning Engineer

Ntropy

2021 – Current | Remote *from Paris, France*

- The company went **from 3 to 27 people in less than 2 years** with a **Series A funding**
- Worked on setting up the **initial pipeline for transaction categorization**:
  - **Named entity extraction (NER)**: Extraction of entities from (non-)natural language consumer and business bank transactions in **multiple languages** using **"cycles training" to avoid forgetting**
  - **Transaction categorization**: Find the category of a transaction from a list that is not set and that can change based on what our customers want using a BERT encoder for **zero-shot classification approach**
- Researched and improved NER using a **Bi-GRU augmented tokenizer** and a custom **noise-robust multi-head DeBERTa** with a **Knowledge Base** (an approach I developed so the model can **use new information without any retraining**)
- Built an in-house human labeling team with pay, testing, and training, as well as a hierarchy of labelers and reviewers
  - Labelers would receive a **"cluster labeling task"** which are **similar tasks grouped together for pattern clarity**
- Developed a **configurable generative model** to help our sales team **unblock our customers from benchmarking** with us if **they face data privacy or even lack of data issues** with transaction data
- Presented at **PyData 2022**

Machine Learning Engineer

Ubisoft Entertainment

2019 – 2021 | Paris, France

- Work on a **fast** and **accurate** semantic **similarity engine** using a state-of-the-art **multilingual DistilBERT-based model** and **ANNG search** in **Python** and **Rust**
- Work on **real-time toxic comments and usernames filtering** for in-game chats. **Research character-level Transformers**.
- **Open-sourced** my **Rust implementation** of our NLP model for **real-time inference** and was a **major contributor** of **v0.3.0** of the **sentence-transformers** library. Also contributed to the **rust-bert** library
- Deployed our **microservice architecture** in production using **Kubernetes** and a complete stack of tools for **benchmarking**, **testing**, **monitoring**, **logging**, and **reporting**
- **Prototype** work on a **fast high-quality face swap** algorithm

Deep Learning Intern

Nvidia Corporation

2018 – 2019 | SF Bay Area, US

- Work on **DLSS (Deep Learning Super Sampling)**, one of **Nvidia Turing**'s major feature for **real-time anti-aliasing** and **upscaling** on latest **AAA video games**
- Work on other projects like **style transfer** for portraits with **autoencoders**, etc
- Participated in conferences like **GDC**, **GTC** and **SIGGRAPH**

Software Engineer Intern

ETIX Labs R&D

2016 | Luxembourg, Luxembourg

- Development of a **smart CCTV** system for data-center monitoring

Software Engineer Intern

Robert BOSCH GmbH

2015 | Saint-Ouen, France

- Development of a web-based **product trading platform** for internal use

SOFTWARE SIDE PROJECTS

Sentence BERT, with Rust

- Efficient **Rust** implementation of the **Sentence BERT** NLP model for **real-time inference**

Real-Time Path Tracer, with CUDA/OpenGL in C++

- Leverages **CUDA/OpenGL** interop with support for BRDF with roughness, **volume raymarching**, **texturing**, **normal maps**, **triangle meshes**, etc

ArtFlow, a Google's Tilt Brush-like, web-based

- ArtFlow is a **VR 3D software**, in which you can **draw your own world** using VR controllers

Real-Time rendering Engine, with OpenGL/GLSL in C++

- Features microfacet-based lighting models like **Cook-Torrance** and **Oren-Nayar** for **Physically Based Rendering**, Spherical Harmonics lighting, texture streaming, adaptive LOD tesselation, SSAO, etc

EDUCATION

M.Sc. in Computer Science

EPITA

2013 - 2018 | Paris, France

B.Sc. in Computer Science

Bahçeşehir Üniversitesi

2015 | Istanbul, Turkey

SKILLS

Industry Knowledge

Machine Learning | Neural Networks | Computer Vision | NLP | Computer Graphics | Rendering | Deployment

Operating Systems

Windows | Linux

Programming Languages

Python | Rust | C | GLSL

APIs

PyTorch | Numpy | OpenGL

Tools

Docker | Kubernetes | Visual Studio | Vim | Jupyter Notebook | LaTeX

INTERESTS

Music | Bouldering | Video games | Travel

LANGUAGES

French ●●●●●

English ●●●●●
TOEIC: 985/990

Arabic ●●●●○

Spanish ●●●○○

OTHER SIDE PROJECTS

Building a Speaker from scratch

- V1: **Reverse an existing crossover** then build upon it to fit my preferences and setup, design enclosure, and plug in existing drivers/woofers. Also, **catch up on Electroacoustics and audio engineering theory**
- V2: Build my own woofer by some **hands-on trial and error and computer simulations of material alloys**. Some preliminary work was done here and I'm currently thinking of reversing either a **Kevlar woofer** or **Focal**'s proprietary **"slatefiber" cone**