Systems Engineer

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PROFILE

I have chased the path of Systems Engineering, currently 26 years old. During my career I became a skilled troubleshooter and programmer. Specialized in digital signal processing, building machine learning models, developing software, and performing data analysis. I have extensive experience working in network architectures and systems used for real-time communication (e.g. Google Meet). Tackling complex problems and providing expert support to top-tier clients of Google. Gaining strong communication skills with stakeholders and solid adaptability to different environments. Moreover, facing complex challenges has made me analytical and look for the most efficient approaches, based on data and reliable research.

SKILLS

- **Programming:** Proficient in Python, C/C++, SQL, Java. Strong foundation in Data Structures and Algorithms. Git. Fullstack experience on application development.
- **Statistical Analysis**: Deep knowledge of distributions, optimization, ML methods like SVMs, Deep learning, LLMs, Transformers. Building pipelines, preprocessing data and fine-tuning (such as tokenization, Adam Optimizer). Extensive use of tools such as TensorFlow, PyTorch, Keras, ScikitLearn, OpenCV and Pandas.
- **Digital Signal Processing:** Study of algorithms and techniques for analyzing and processing digital signals, including audio and video signals. Including analysis/synthesis, filtering, codecs, and modulation of signals. FFmpeg, Pure Data.
- **Networks:** Expert on network technologies and protocols used on the internet and for streaming of audiovisual content. Fast in understanding different complex network architecture. Advanced use of Linux/Unix systems.
- Computer Graphics: Expert knowledge rendering, shaders, use of frameworks like OpenGL. Theory and application on 3D reconstruction methods like NERFs, Gaussian Splatting.
- **Multimedia Systems:** Encoding, strong mathematical knowledge of compression and transmission of multimedia content. Experienced building apps for streaming and using Audio and Video Equipment.
- Audio Engineering: In-depth understanding of audio technologies, including recording, mixing and mastering audio. Acoustics and 3D Audio.
- Video Engineering: Experience of computer vision development. Comprehensive study of video technologies, including capture, editing, and distribution of video content.
- Languages: Fluent in Spanish and English, French (B1) and German (A2).

WORK EXPERIENCE

TECHNICAL SUPPORT ENGINEER GOOGLE WORKSPACE, WEBHELP (APRIL 2022 - MAY 2024). BARCELONA, SPAIN

I provided expert support and troubleshooting for top tier enterprise-level Google clients, specializing in Real-Time communications services such as Google Meet, Google Chat, and Google Voice. I also provided support for Management of the Chrome browser and devices with Google's MDM systems.

Some tasks included:

- Examine documentation, logs, HAR files, Google's code, network data and anything necessary to troubleshoot the query of the customer and proceed to next steps. Becoming an expert on protocols such as WebRTC, VoIP, HTTP.
- Efficiently communicate with the stakeholders (eg. Admins, other Google's engineers) via email and meetings.
- Identify and create structured analysis to report bugs with the data collected. I've helped software engineers solve issues on the code. This contributed to improving Google services, documentation and code quality.
- Guided lower level support agents on complex technical aspects.

OPERATIONS/SYSTEM ENGINEER, FOOD-HAVEN (SEPTEMBER 2021 - APRIL 2022). BARCELONA, SPAIN.

I completed multiple tasks and projects related to IT and Data Analyst for a chain of restaurants with 7 brands. Main tasks:

- Created complex Power BI (with DAX) reports joining several data sources using their API. The reports depict insights about sales, products, stock, impact of marketing strategies for each brand. This helped other departments to have an easy way to understand, filter and relate data to optimize operations.
- Build models using Python with machine learning techniques. This reduced risk impacts by adjusting our operations and strategies accordingly.
- Setup, control and maintenance of hardware equipment and network architecture, use of NAS storage.

EDUCATION

Bachelor's degree in Audiovisual Systems Engineering at Pompeu Fabra University, Barcelona, Spain

Focuses on the theory and development of Multimedia systems, signal processing and transmission. Some projects:

- Creation of 3D frameworks with C++ and OpenGL, I applied volumetric and raster rendering algorithms on shader programming. Implemented lights, shadows and textures, obtaining an application capable of rendering realistic scenes.
- Full stack development of a 3D chat application using NodeJS, Javascript, Three.js.
- All courses included practical coding work. Languages like Python, C/C++, Java, JavaScript, Matlab, Assembly code.

LLMs Mastery: Complete Guide top Transformers & Generative Al, Udemy. Febrero 2025

This course helps you improve your understanding of Generative AI and Master Transformers & LLMs with theory and practical assessments. Learning about some of the state-of-the-art AI architectures in detail and optimizing them (e.g GPT, BERT, LoRA).

FINAL DEGREE PROJECT

Machine learning for expressive music performance in Cello: Extensive research project on modeling cellist expressive performance. Data was provided by Imperial College London. I applied various ML techniques like SVMs, Neural Networks and LSTM in Python to create multiple models of how artists perform on intensity and duration of notes. The result was an extensive analysis of cellist expressive performance modeling and graphs depicting the correlation between artists. This contributed to the research field of sound and music AI computing and expressive performance understanding. Grade 9.5/10

[1] Machine learning-based modelling of expressive style influences among famous cello interpreters (upf.edu)