Jesus Garcia Ramirez

jgarciaramirezai@gmail.com | +34665444632 | Leuven, Belgium | linkedin.com/in/jesusgarciaramirez

SUMMARY

Proactive machine learning engineer with 3+ years of specialized experience in creating and implementing effective ML solutions with a proven track record of **excellent communication** and **teamwork** demonstrated through successful collaboration within interdisciplinary teams of researchers, engineers and non technical stakeholders. Confident in the ability to **excel** in **fast paced environments** while supporting smart business decisions.

SKILLS

Technical Skills: Machine Learning Algorithms, CNNs, Time Series Analysis, Research, Data Visualization
Tools: Python (Pytorch, Skikit-Learn, SciPy, Pandas), MLOps, Microsoft Office, Slack
Soft Skills: Effective communication, Knowledge sharing, Curiosity, Time management
Certificates: Introduction to Machine Learning in Production

EXPERIENCE

PhD Researcher, KU Leuven *Jan 2022 - Present*

- Developed an **accurate (**80% explained variance) **CNN**-based model for predicting neuron responses to images, bridging the gap between **computational** and biological **vision**.
- **Optimized** Receptive Field estimation by designing a novel **Gaussian approximation**, reducing fitting parameters by thousands.
- Implemented a **closed-loop pipeline** leveraging CNN encoding models, successfully identifying optimal stimuli for recorded neurons within a **high-pressure**, one-day **experiment**.
- Created an **end-to-end** interactive **visualization** to enhance model **interpretability** and facilitate **communication** with non-technical **stakeholders**.

Research Engineer, KU Leuven *Jan 2021 - Dec 2021*

- Engineered a highly **accurate (**92% success rate) and **fast** (microsecond inference) **Brain Machine Interface** system using a non-linear extension of Kalman filter, enabling **real-time control** for individuals with reduced mobility
- Developed an innovative **online retraining** procedure to reduce the amount of required training data resulting in a 90% data utilization reduction, paving the way for broader accessibility.
- Led a **cross-functional team** of researchers, engineers, and non-technical stakeholders to **deliver** the **solution** 6 months **early**, exceeding expectations.

PROJECTS

Efficient analysis of mobile eye tracker data using Deep Learning

- Developed an **automatic labelling tool** to streamline the analysis of mobile **eye-tracking** recordings from an art exhibition
- **Finetuned a** video classification **model** (SlowFast) using curated 10k sample dataset, **reducing manual workload o**n 80% with 90% accuracy
- **Adapted** Resnet to handle **multidimensional time-series da**ta for behaviour prediction, achieving 60% automation with 80% accuracy

EDUCATION

PhD in Neuroscience, *Jan 2022 - Present*
KU Leuven
M.Sc. in Artificial Intelligence, *Sep 2019 - Sep 2020*
KU Leuven
B.Sc. Industrial Engineering, *Sep 2015 - Jul 2019*
University of Seville

ACHIEVEMENTS

Speaker at Society for Neurosciences in Washington D.C, USA *Nov 2023*

- Presented poster: "Single neuron signatures of spatial attention in the human lateral occipital complex"

Speaker at Neural Control of Movement in Victoria, Canada *Apr 2023*

- Presented poster: "Comparing reach direction decoding in macaque PMv, PMd and M1"

Speaker at Society for Neuroscience in San Diego, USA *Nov 2022*

- Presented poster: "Single unit correlates of visual reasoning in the human lateral occipital complex"

Speaker at Federation for European Neuroscience Societies in Paris, France *Jul 2022*

- Presented poster: "Object decoding with spatial attention in the human lateral occipital complex"

Speaker at Society for Neuroscience in Chicago, USA *Nov 2021*

- Presented poster: "Decoding reaching direction from macaque dorsal and ventral premotor and primary cortex"