Giuseppe Barbalinardo, Ph. D.

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Experience

Manager - Data Science & Engineering @ Tonal **(Jan '22 – Now)**
Manager and hands-on tech leader of the User Performance Modeling team (8 researchers/engineers). The team is focused on designing and implementing Tonal's trainer intelligence, using user features and sensor data to model and predict human performance metrics like fatigue, mobility, and strength.
Technologies: Python, Tensorflow, TFLite, C++, GoLang, Postgres, Snowflake, Looker, Jira

Senior Data Scientist @ Tonal **(Jan '21 – Dec '21)**
Research, design, implementation, testing, and production code deployment of novel machine learning models and algorithms to advance the Tonal's trainer intelligence using large-scale datasets. Development of the Tonal's sensor fusion engine.
Technologies: Python, Tensorflow, TFLite, C++, GoLang, Postgres, Amplitude, Looker, Jira

Software Development Investment Fellow @ The Molecular Sciences Software Institute **(Jun '19 – Dec '20)**
Principal developer of the kALDo software, a Tensorflow-based open-source package for heat transport simulations, optimized to run large-scale simulations on CPUs and GPUs. Website: nanotheorygroup.github.io/kaldo.
Technologies: Python, Tensorflow, CUDA, MPI

Engineering Manager – Mobile Team @ Grio **(Dec '15 - Aug '16)**
Managed a team of 8 engineers. Implemented Agile software development methodologies across several projects, while contributing with hands-on coding. Designed and implemented the new apprentice and mentorship program. Organized the company's first hackathon.
Technologies: Objective C, Swift, SQLite, Java, Jira

Software Developer @ Grio **(May '14 – Nov '15)**
Developed core features of the Target iPad app (4M+ reviews) and the Texture Next Issue app (now Apple News), through product prototyping, validation and iterations. Collaborated with the marketing and business team at Twitter to develop 10+ Python/AngularJS dashboards.
Technologies: Objective C, Swift, SQLite, Java, MySQL, Python, AngularJS, JavaScript, Jira

Skills

Python: Numpy, Scikit Learn, Pandas, Tensorflow, TFLite, Keras
Software Development: GoLang, JAVA, C/C++
DB: Postgres/MySQL, Snowflake, FAISS/Milvus
Infrastructure: Docker, Kubernetes, AWS, Google Cloud Platform
Mobile: Objective C, Swift, Android
Analytics: Looker, Amplitude
High Performance Computing: MPI, CUDA

Education

Ph. D. - University of California, Davis - Computational Chemical Physics
Research Advisor: Dr. Davide Donadio

M.Sc. - University of California, San Diego - Physics
Research Advisor: Dr. Lu Jeu Sham

M.Sc. - University of Milan-Bicocca, Italy - University of Uppsala, Sweden - Theoretical Physics
Research Advisor: Dr. Peter Oppeneer

B.Sc. - Physics - University of Milan-Bicocca, Italy

Awards

Software Development Investment Fellowship - National Science Foundation, Molecular Sciences Software Institute. / Peter A. Rock Graduate Fellowship for the highest academic merit and research in Chemical Physics - UC Davis. / 4.0 GPA at UC Davis / Distinguished M.Sc. thesis award. Fellowship for the dissertation: "Quantum Theory of the Inverse Faraday Effect" - the Lerici Foundation in Stockholm / Summa Cum Laude M.Sc. Degree in Theoretical Physics - University of Milan, Bicocca

Publications and Patents

Published 8 papers in international peer reviewed journals, in the fields of Science and AI. The list includes Nature Communications and Physical Review Letters. Author of the patent: Exercise Machine Struggle Detection, Application @ Tonal. Full list of articles available on Google Scholar.