



Meysam HASHEMI

Senior Research Flow



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+33 (0)4 91 32 42 51



Meysam.hashemi@gmail.com
Meysam.hashemi@univ-amu.fr



27 blvd. Jean Moulin
13005, Marseille, France



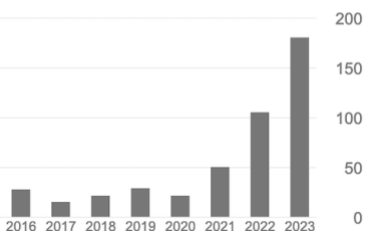
French, Iranian

LANGUAGES

English, French, Persian

Google Scholar

Citations	482	409
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References

Viktor JIRSA (viktor.jirsa@univ-amu.fr)

Axel HUTT (axel.hutt@inria.fr)

A. VALIZADEH (valizade@iasbs.ac.ir)



Profile

I develop and adapt biologically- and physics-informed AI/ML tools for flexible and efficient parameter estimation using Frequentist and Bayesian approaches. I have extensive experience (>12 years) in working with different computational models, particularly, to quantify the uncertainty for decision-making process by interventions in complex systems (e.g., mean-fields and whole-brain models), both analytically and numerically, to improve diagnostics and therapies for brain disorders, digital health and drug research.



EDUCATION

- **Bachelor of Science: Physics, solid state | 2004-2008**
[KHU](#), Tehran, Iran.
- **Master of Science: Physics, soft condensed matter | 2008-2012**
[IASBS](#), Zanjan, Iran.
Thesis: *Effect of duration of synaptic activity on spike rate of a Hodgkin-Huxley neuron with delayed feedback.*
- **PhD: Computer science | 2012-2016**
[Université de Lorraine](#), Nancy, France
Thesis: *Analytical and numerical studies of thalamo-cortical neural population models during general anesthesia.*
- **Postdoctoral: Probabilistic AI/ML for digital brain twins | 2016-2023**
[Aix-Marseille université](#), Marseille, France
Project: *State-of-the-art Bayesian inference over the virtual brain models of brain diseases; Deep neural density estimators for simulated-based inference and adaptive Monte Carlo for principled and automatic statistical estimation.*



WORK EXPERIENCE

- **PhD Researcher: [INRIA Grand-Est](#), Nancy, France | 2012-2016**
- **RHU Researcher: [INS](#), [EPINOV](#), Marseille, France | 2016-2023**
- **Engineer Researcher: [SATT Sud-Est](#), Marseille, France | 2017-2018**
- **Data Scientist: [EBRAINS](#), Human Brain Project ([HBP](#)) | 2018-2023**



SKILLS

- Bayesian inference, MCMC, Variational/Simulation-based inference, Optimization.
- Probabilistic AI/ML, Clinical trials, Time-series forecasting, GMLSS, HMM, VAR.
- Dynamical system, Stochastic and Delay Differential equations (SDEs/DDEs).
- Oscillations, Spiking and Mean-Field models, Pharmacometrics, Neuroimaging data.
- Python, Pytorch, Tensorflow, Matlab, C++, Git, Slurm, high-performance computing.
- PPLs: Stan, PyMC3, NumPyro, Edvard, Turing, scikit-learn, and The Virtual Brain.



ACTIVITIES

- >40 Publications including Lancet Neurology, Science Medicine, Science Advances, Nature Computational Biology, Neural Networks, NeuroImage, PLOS CB, MLST, ...
- Multiple patents with current use in national clinical trials and best tech Innov. HBP).
- (co-)Supervising master and PhD students, teaching, grant-writing, and workshops.