Navid **Mousavi**

Profile

Passionate **physicist** with a strong foundation in **problem-solving** skills, **mathematical modeling**, and **analytical thinking**. Experienced in **simulation** and study of various dynamical systems, employing **computational methods**, analyzing and interpreting **data**, and effective data **visualization**, with proficient coding skills in **C/C++**, **Python**, and **MATLAB**. More than 4 years of experience in **machine learning**, specifically **(deep) reinforcement learning**, by applying it to cutting edge **research** on active matter physics. Also, familiar with underlying mathematics and implementation of different **neural network** models, including, FCN, CNN, Boltzman machines, Autoencoders, and Reservoir computers. Possessing over a decade of **teaching experience** in various settings, and **presenting** scientific results in several **international conferences**, gives me the confidence in **communication** and skills to convey **technical information** in simplified terms. **International collaboration** with people from diverse backgrounds has made me efficient in **teamwork**. Moreover, having experience of working in different roles such as CEO, organizer, and journal editor, has enhanced my **leadership** skills.

Hobbies

Astrophotography, Calligraphy, Camping.

Contact details

@ navid.mousavi@physics.gu.se

+46 727 663 763

navmou.github.io/homepage/

Origovägen 6 b,
Göteborg, SE-41296

(See extended version of my CV on my homepage)

Education

Ph.D. of Physics. *University of Gothenburg, Sweden*. **Jan. 2020 - Present**
Thesis title: *Planktonic navigation in turbulent flow.*

M.Sc. of Physics. *Shiraz University, Iran*. **Sep. 2016 - Sep. 2018**
Thesis title: *Statistical properties of particle spread in random media.*

B.Sc. of Physics. *Shiraz University, Iran*. **Sep. 2011 - Sep. 2016**
Thesis title: *Kuramoto model simulation of a system of oscillators.*

Experience

Researcher at Beheshti University (Tehran, Iran) **Jul. 2019 - Dec. 2019**
Studied the first-passage time statistics of generation of new pages in Wikipedia as a complex network. Used Python API for Wikipedia for data collection and analysis.

Data scientist at Tarjoman Club (Shiraz, Iran) **Sep. 2018 - Dec. 2018**
Built a database of best selling books, separated in translated/non-translated (to Persian) groups. Used Python web-scraping libraries such as Beautifulsoup to collect the data and MongoDB for database.

CEO, Developer at Satvis Institue (Shiraz, Iran) **Jan. 2016 - Oct. 2019**
Co-founded an institute for teaching astronomy using virtual reality glasses. Developed the framework for the courses, developed material and videos, and taught the courses.

Web developer at Biruni Observatory (Shiraz, Iran) **Sep. 2017 - Jan. 2018**
Collaborated as a developer of the observatory's website (See).

Researcher at Biruni Observatory (Shiraz, Iran) **Sep. 2013 - Apr. 2016**
Studied variable stars by photometry. Observation and data collection with large scale telescopes. Data reduction and analysis with various astronomical packages and software.

Teaching

Chalmers and University of Gothenburg **Sep. 2020 - Dec. 2023**
Artificial neural networks (info), Dynamical systems (info)

Shiraz University **Sep. 2013 - Sep. 2018**
Computational physics, Thermodynamics, Mechanics, Electromagnetism

Biruni Observatory **Sep. 2013 - Sep. 2018**
Astrophysics, Cosmology, Observational astronomy and instrumentation

Satvis Institue **Jan. 2016 - Oct. 2019**
Astronomy

Skills

Coding: C/C++, Python, MATLAB, Octave, Mathematica
Tools: GIT, TensorFlow, Pytorch, scipy, numpy, pandas, BeautifulSoup, JSON, HDF5
Text and Visualization: LaTeX, Microsoft word, matplotlib, plotly, GIMP, Inkscape

Publication

Efficient survival strategy for zooplankton in turbulence
N. Mousavi, J. Qiu, B. Mehlig, L. Zhao, K. Gustavsson, submitted to Physical Review Letters, **2023**

Active gyrotactic stability of microswimmers using hydromechanical signals
J. Qiu, **N. Mousavi**, L. Zhao, K. Gustavsson, Physical Review Fluids, 7 (1), 20, 014311, **2022**

Navigation of micro-swimmers in steady flow: the importance of symmetries
J. Qiu, **N. Mousavi**, K. Gustavsson, C. Xu, B. Mehlig, L. Zhao, Journal of Fluid Mechanics, 932, 21, A10, **2021**

Synchronization in coupled phase oscillators with asymmetric interaction
N. Mousavi, M. G. N. Haghighi, S. Bazmi, Annual Physics Conference of Iran, **2016**

Light curve and maximum time report of SX Phe star AE UMa
S. Hojjatpanah, **N. Mousavi**, S. M. Kazemi, Information Bulletin on Variable Stars (IBVS) No. 6199, **2014**

Leadership

Manager of outreach programs at Biruni Observatory	**2015-2018**
Committee member of astronomy and astrophysics student society of Shiraz University (AASSU)	**2012-2015**
Director of AASSU	**2013-2014**
Editor of Giti magazine (scientific magazine of AASSU)	**2012-2013**