Tom P. A. Warner

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Personal profile

I am a recently submitted PhD candidate working in Systems Neuroscience, an interdisciplinary field of research. My work has allowed me to learn a wide range of techniques, from surgeries to machine learning. During my PhD I acquired an appreciation for the application and evolution of machine learning techniques and want to transition towards this field.

Skills profile

Computational skills
- Languages:
    o Python – 7 years of experience
    o MATLAB – 3 years of experience
    o C++, Java – 2 years of experience
    o JavaScript – > 1 year of experience
- Experience in constructing multistage analysis pipelines for large datasets
- Adept in distributed computing and workload managers e.g., SLURM/Dask
- Experience in accelerated computing techniques e.g., CUDA
- Experience in using Git both for individual and collaborative projects

Technical skills
- Strong mathematical ability, confident in linear algebra and statistics
- Experience with electrical engineering and circuit construction
- Confident in multi-stage modelling of real-world data
- Application of both supervised and unsupervised machine learning techniques to both modelled and real-world data e.g., support vector machines, linear and logistic regression, PCA, K nearest neighbours, etc

General skills
- Excellent written and verbal communicator – experience delivering presentations to both expert and general audiences
- Experience in leadership roles, i.e., coordinating a team to devise and deliver a scientific outreach event

Education

PhD Neurophysiology   **2017-2022**
"Projection neurone encoding of single sniff high frequency stimuli"
The Francis Crick Institute, awarded by King College London

MSci Physics – *First class honours*   **2013-2017**
Master's project: "Optimising soft cantilevers for use in liquid tapping mode AFM"
University College London

A levels: A* Maths, A* Physics, A Chemistry   **2011-2013**
Thomas Tallis Secondary School

Publications

Coupling of Mouse Olfactory Bulb Projection Neurones to Fluctuating Odour Pulses
D. Dasgupta, **T.P.A. Warner**, A. Erskine, A.T. Schaefer
Journal of Neuroscience - 2022

jULIEs: Nanostructured Polytrodes for Low Traumatic Extracellular Recordings and stimulation in the Mammalian Brain
R.R. Racz, M. Kollo, G. Racz, C. Bulz, T. Ackels, **T.P.A. Warner,** W. Wray, N. Kiskin, C. Chen, Z. Ye, L. de Hoz, E. Rancz, A.T. Schaefer
Journal of Neural Engineering - 2022

Fast Odour Dynamics are Encoded in the Olfactory System and Guide Behaviour
T. Ackels, A. Erskine, D. Dasgupta, A.C. Marin, **T.P.A. Warner**, S. Tootoonian, I. Fukunaga, J.J. Harris, A.T. Schaefer
Nature - 2021

Volunteer and Work Experience

Summer student host   **2022**
The Francis Crick Institute
Hosted secondary school students and designed tasks aimed for them to understand the role of a researcher, including circuit design and computational modelling

Volunteer tutor   **2020-Present**
The Access Project
Tutoring both Chemistry and Physics to AS and A level students

Demystifying dangerous diseases   **2019**
Bluedot Science and Music Festival
Assisted in the design and implementation of a science outreach event aimed at children and families focused around viral and bacterial pathogens

The Crick Data Challenge   **2018**
The Francis Crick Institute
Assisted other researchers struggling with their data analysis in an in-building hackathon

Spikeling/Place cell game   **2018-2019**
The Francis Crick Discovery Day and Crick Late events
Developed and implemented a science outreach task aimed at both adults and children focused on the roles of different neurones in the brain.

Mathematics Tutor   **2015-2016**
Parch Hill Tutors

Volunteer First aider   **2011-2014**
St John's Ambulance