Julian Dominik Stamp

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Experience

TNG Technology Consulting GmbH
May 2019 – November 2020

Software Consultant

Member of the **build management** team for several software projects of an insurance company
Setting up build infrastructure and automation with cloud technologies
Technologies: Groovy, Shell, Docker, Git, Maven, Openshift, Cloudfoundry, Jenkins, Nexus

Education

Brown University, USA
2020 – present

PhD Computer Science

Modules included: Statistical Inference I, Algorithms CompBio & Bioinfomatics, Bayesian Statistical Methods, Inference in Genomics and Molecular Biology, Foundations Population Genetics, Linear Models, Scientific Communication

Research Interests: Statistical Methods for studying nonlinear contributions to trait variance, genetic architecture of complex traits, epistasis and gene by environment interactions

Advisor: Lorin Crawford, Daniel Weinreich

Ludwig-Maximilians-Universität München, Germany
2016 - 2018

MSc Physics/Biophysics (GPA 1.29, scale 1.0 - 4.0 with 1.0 highest mark)

Modules included: Nonlinear dynamics and pattern formation, stochastic processes in physics and biology, biophysics of systems, biophysics of the cell, advanced solid state physics, advanced quantum mechanics, advanced statistical physics, C-programming

Master Thesis: Nonequilibrium Conditions for Molecular Evolution: EDC-based Ligation in Thermal Traps (**graded with 1.0** , scale 1.0 - 4.0 with 1.0 highest mark)

Advisor: Prof. Dieter Braun

University Konstanz, Germany
2012 - 2016

BSc Physics (GPA 1.5, scale 1.0 - 4.0 with 1.0 highest mark)

Modules included: Integrated course physics I-IV (comprises mechanics, hydrodynamics, electrodynamics, thermodynamics, analytical mechanics, optics, special relativity, quantum mechanics, etc.), beginner laboratory course I-IV, calculus I-III, linear algebra, complex analysis, computer course for mathematicians, solid state physics, statistical mechanics, advanced laboratory course

Bachelor Thesis: Comparison between Mechanically Controlled Break Junctions and Scanning Tunnelling Microscope-based Break Junctions for Characterizing Single-Molecule Contacts

Advisor: Prof. Elke Scheer

Research Experience

Ludwig-Maximilians-Universität München, Germany
Oct 2017 - Nov 2018

Thesis Research at the Systems Biophysics laboratory of **Prof. Dieter Braun**
Topic: DNA ligation with EDC in thermal traps

- Comsol Simulations of thermal traps, LabView Simulations of random motion of particles in flow fields and temperature gradients
- Experimental Realization of simulations
- HPLC-MS, Bioanalyzer, UV-spectroscopy

Max Planck Institute for Neurobiology, Munich
March 2017 – Dec 2017

Research Assistant at department of **Prof. Winfried Denk** under supervision of **Dr. Shawn Mikula**
Topic: image registration and tile stitching of anatomical EM images

- Translating existing code from Matlab to Python, literature review of image registration methods

Columbia University, USA May 2016 – Sept 2016	**Visiting Scholar** at the Molecular Electronics laboratory of **Dr. Latha Venkataraman** **Topic:** single-molecule junction characterization with MCBJ and STM-BJ • Optimization of measurement technology and data acquisition for the MCBJ • Data acquisition with MCBJ and STM-BJ • Coding and conducting the analysis of data of single-molecule break junctions with IGOR Pro
Stony Brook University, USA Dec 2014 – May 2015	**Research assistant** at the Cognitive Neuroscience laboratory of **Dr. Hoi-Chung Leung** **Topic:** spatial working memory maintenance • Coded and conducted the analysis of behavioural data in MATLAB, conducted experiments with human subjects • Poster presentation at the 2015 URECA Undergraduate Research Symposium: **Stamp JD***, Lee AS*, Manza P, O'Rawe J, Leung HC. (2015). Exploring the neurochemical basis of human spatial working memory maintenance with eye blink activity. *2015 URECA Undergraduate Research Symposium*, Stony Brook, NY, April 29. **Authors contributed equally to this work.*

Publications

Stamp J., Pattillo Smith S., Weinreich D., Crawford L. (2025). *Sparse modeling of interactions enables fast detection of genome-wide epistasis in biobank-scale studies. bioRxiv*

Stamp J., Crawford L. (2025). *smer: Sparse Marginal Epistasis Test*. https://github.com/lcrawlab/sme, https://lcrawlab.github.io/sme/. (R Package)

Balvert, M., Cooper-Knock, J., **Stamp, J.** *et al.* Considerations in the search for epistasis. *Genome Biol* **25**, 296 (2024). https://doi.org/10.1186/s13059-024-03427-z

Li, K., Chaguza, C., **Stamp, J.**, Chew, Y. T., Chen, N. F., Ferguson, D., ... & Grubaugh, N. D. (2024). Genome-wide association study between SARS-CoV-2 single nucleotide polymorphisms and virus copies during infections. *PLOS Computational Biology*, *20*(9), e1012469.

Kim Jr., I. E., Oduor, C., **Stamp, J.**, Luftig, M. A, Moormann, A. M, Crawford, L., Bailey, J. (2024). Incorporation of Epstein-Barr viral variation implicates significance of LMP1 in survival prediction and prognostic subgrouping in Burkitt lymphoma. *biorXiv (preprint)*

Pattillo Smith S., Darnell G., Udwin, D., **Stamp J.,** Harpak, A., Ramachandran S., Crawford L. (2024). Discovering non-additive heritability using additive GWAS summary statistics. eLife

Stamp J., DenAdel A., Weinreich D., Crawford L. (2023). *Leveraging the Genetic Correlation between Traits Improves the Detection of Epistasis in Genome-wide Association Studies. G3 Genes|Genomes|Genetics*

Stamp J., Crawford L. (2023). *mvMAPIT: Multivariate Genome Wide Marginal Epistasis Test*. https://github.com/lcrawlab/mvMAPIT, https://lcrawlab.github.io/mvMAPIT/. (R Package)

Edeleva, E., Salditt, A., **Stamp, J.**, Schwintek, P., Boekhoven, J., & Braun, D. (2019). Continuous nonenzymatic cross-replication of DNA strands with in-situ activated DNA oligonucleotides. *Chemical Science*.

Grants and Conferences

ISMB 2023	Lyon, Jul. 2023 **J. Stamp**, A. DenAdel, D. Weinreich, L. Crawford (2023). Leveraging the Genetic Correlation between Traits Improves the Detection of Epistasis in Genome-wide Association Studies.
A multidisciplinary approach to epistasis detection	Leiden, Jul. 2023 **J. Stamp**, L. Crawford (2023). Partitioning the non-additive variation of complex traits.
Vartan Gregorian Fellowship	Endowed Fellowship for the Academic Year 2021-2022.
Erasmus Stipend	Ludwig-Maximilians-Universität, 2018 Grant for the exchange with Universidad de Granada, funded by the European Union

Molecular Origins of Life CAS Conference	Munich, Oct. 2018
	P. Schwintek, **J. Stamp**, C. Mast, and Dieter Braun* (2018). Monitoring the accumulation of molecules inside hydrothermal chambers via UV-Spectroscopy.
Neurostorm Hackathon	Woods Hole, Massachusets, Oct. 2017
	Conference on the **processing of large-scale neuroimaging data**. Participation sponsored by the Grossman Institute for Neuroscience (University of Chicago), travel sponsored by the Max-Planck Institute of Neurobiology, Munich
PROMOS Stipend	University of Konstanz, 2016
	Grant for conducting **thesis research at Columbia University**, funded by the DAAD and sponsored by Bundesministerium für Bildung und Forschung

Community Service

Fundación Alalay, Bolivia June 2015 – July 2015	**Working for the Fundación Alalay in La Paz, Bolivia**
	Working in an orphanage, working with street children, problem solving, mediation, communication with administrative staff
	Self organised community service
École Perceval, France Sept 2011 – July 2012	**Educational assistant at École Perceval in Paris, France**
	Assisting the educators with the day-to-day work, teamwork, problem solving, mediation, communication with parents or guardians
	Federal Volunteer Community Service, sponsored by Freunde der Erziehungskunst Rudolf Steiners

Exchange Programs

Universidad de Granada, Spain Sep 2018 - Jan 2019	**Modules included**: Numerical Analysis of PDE and Approximation, Colloids and Interfaces
Stony Brook University, USA 2014 - 2015	**Modules included:** applied real analysis, data analysis, nuclear and particle physics, logic and critical reasoning, moral reasoning
	Research methods included: Eye Link software, MATLAB

IT Skills and Languages

Languages:	Proficient in **German** and **English**, fluent in **French**, good knowledge of **Spanish**
Technologies:	R, C++, Python, Shell, Docker, Git, LaTeX, MATLAB, Mathematica