

Tomas Petricek – Materials for Evaluation

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International Experience

- **Lecturer, University of Kent**, 2018 – 2022
As a member of the [Programming Languages and Systems](#) group, I worked on making programming with data easy, trustworthy and accessible. I applied for grants from [EPSRC](#) (UK) and [ERC](#) (EU), [Dstl & GCHQ](#) (UK), taught graduate and undergraduate modules, supervised a PhD student and initiated interdisciplinary collaboration with a colleagues from [Department of Philosophy](#).
- **Collaborating Fellow and Visiting Researcher, The Alan Turing Institute**, 2016 – 2020
I led a project [Programming Tools for Open Data Journalism](#) funded through [Google Digital News Initiative](#), joined the flagship ATI project [Artificial Intelligence for Data Analytics](#) as a co-investigator and obtained funding from [Dstl and GCHQ](#) for a follow-up project on semi-automated data wrangling.
- **Post-doctoral Researcher and Contractor, Microsoft Research Cambridge**, 2014 – 2016
I led the development of an open-source projects focused on doing data science with F#. Resulting research was awarded a [Distinguished Paper](#) award and selected as an [SIGPLAN Research Highlight](#).
- **Intern, BlueMountain Capital Management, New York**, August 2013 – November 2013
Developed Deedle, an open-source data and time-series analytics library for .NET and integrated it into existing codebase, replacing earlier technologies; the library has been adopted at BlueMountain and externally.
- **PhD, Computer Laboratory, University of Cambridge**, 2011 – 2016
Thesis [Context-aware Programming Languages](#) develops coeffects, a theory for tracking information about environment in which programs are executed. I also devised a novel way of presenting the results in the form of widely read interactive essay (tomasp.net/coeffects). Supervised by [Prof. Alan Mycroft](#).
- **Research Intern, Microsoft Research, Cambridge**, April 2007 – July 2007 and October 2008 – April 2009
Contributed to the development of F# tooling for Visual Studio, designed an F# language extension for parallel, asynchronous and concurrent programming and prototyped novel approach to multi-tier web development.

Research Projects

Project Funding

- **PRIMUS Research Programme, Charles University** (Principal Investigator), 2024 – 2028
Awarded €610,000 for research on [Types for data-centric programming](#) to cover 60% FTE of my time, two post-docs for 24 months each and 2 PhD students for the duration of the project.
[Project Outputs](#)
 - 1 PhD student and 1 post-doc joined the research group in April 2024 and May 2024.
 - Workshop paper submitted to [HATRA '24](#) workshop at the [SPLASH 2024](#) conference
- **Fellowship, ACM History Committee**, 2018
Awarded \$4000 to study the history of programming errors, looking at technical, formal and social means for mitigating them, resulting in a work-in-progress book [Cultures of Programming](#).
[Project Outputs](#)
 - Draft paper, serving as the basis for Cambridge University Press monograph [Cultures of Programming](#)
- **Dstl & GCHQ grants, The Alan Turing Institute** (Principal Investigator), 2017 – 2020
Awarded £420,000 for research on tooling for data science to cover a post-doc for 6 months, Research Software Engineer for 3 years, 3 summer interns, my salary/buyout for 1 day/week.
[Project Outputs](#)
 - 3 top-tier papers in [POPL](#), [JFP](#), [VL/HCC](#) and workshop papers in [TaPP](#)
 - Three open-source software packages (wrattler.org, compostjs.github.io and turing.thegamma.net)

- **Innovation Fund, Google Digital News Initiative** (Principal Investigator), 2016
Awarded €50,000 for research on [Programming tools for data journalism](#). My proposal was selected as one of 128 out of 1,200 and allowed me to develop an independent research project at The Alan Turing Institute.
Project Outputs
 - Paper in [ECOOP](#), extended abstracts in digital journalism venues, open-source software ([thegamma.net](#))
 - Workshop hosted at [The Alan Turing Institute](#) bringing together journalists, academics and policy makers

Project Participation

- **Language, Picture, Gesture: Forms of Discursivity** (Junior Researcher), UNCE, MFF UK (2024 – present)
Studying programming and interactive systems from a broader inter-disciplinary perspective.
Project Outputs
 - Talk [Interactive Programming as a Shift from Language to Gesture](#) at a project conference in autumn 2024.
- **ExtremeXP** (Member), Horizon Europe, MFF UK (2023 – present)
Contributing to the design of novel data visualization tools and gamification systems.
Project Outputs
 - Novel visualization design, presented at an internal project meeting.
- **PROGRAMme: What is a computer program?** (Member), ANR France (2017 – present)
Interdisciplinary collaborative project, serving as co-editor for the resulting work-in-progress book.
Project Outputs
 - Collaborative manuscript [What is a computer program?](#) submitted to a potential publisher.
 - Participation in the project inspired invited talk at [ASL/APA Meeting](#) in San Francisco.
- **AIDA: AI in Data Science** (Co-Investigator), The Alan Turing Institute (2016 – 2018)
Joined and reshaped the project to allow integration of work by 3 post-docs and 1 PhD student.
Project Outputs
 - Collaboration resulted in a joint paper in [IEEE Transactions on Knowledge and Data Engineering](#).

Scientific Supervision

- **Aleks Boruch-Gruszecki** (Post-doctoral Researcher), Charles University, 2024 – present
Co-supervised with [Prof Jan Vitek](#).
- **Joel Jakubovic** (Post-doctoral Researcher), Charles University, 2024 – present
Research topic [Graphical Constraint Programming for Notational Freedom](#).
- **Roly Perera** (Post-doctoral Researcher), The Alan Turing Institute, 2019
Program change tracking with applications in AI research. Now at [University of Cambridge](#).