

GENERAL

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LANGUAGES

Czech	Native
English	C2
German	A1

ŠIMON KUCHARSKÝ

PhD Candidate, University of Amsterdam

EDUCATION

PhD - Psychological Methods and Developmental Psychology 2018 - 2024 University of Amsterdam, the Netherlands

Thesis: Methods and models for eye-tracking data

Promotors: Ingmar Visser, Maartje Raijmakers, E.-J. Wagenmakers

- Developed, validated, and applied Bayesian Cognitive Process models integrating eye-movements with other streams of data (e.g., responses, response times). Models are written in Stan language.
- Developed and implemented pre-processing pipelines for raw eye-tracking data.
- Contributed to collaborative research projects Many Babies 4 and Many Babies 5 by writing code that runs experiments in the lab and writing analysis code.
- Proposed alternative experimental paradigm to study infant habituation using Bayesian process models and organized a collaborative project of systematic review and meta-analysis of infant habituation literature.
- Contributed to projects popularizing Bayesian approaches in (developmental) psychology.

Msc. - Psychological Methods 2016 - 2018 University of Amsterdam, the Netherlands

Thesis: A Default Bayesian Test for Partial Correlations

Supervisors: E.-J. Wagenmakers, Alexander Ly

- Developed an analytic Bayesian inference for partial correlation.
- Implemented the approach in JASP.

B.A. - Psychology 2013 - 2016 Charles University in Prague, Czech republic

Thesis: Self-Control: Disentangling Inhibition and Initiation

Supervisor: Marek Vranka

- Reviewed the state of self-control literature.
- Proposed an alternative experimental paradigm to study self-control.

SKILLS

Statistics



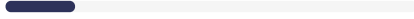
Research Design



Programming



Machine Learning



Teaching & Mentoring



WORK EXPERIENCE

Software developer

JASP, Amsterdam (the Netherlands)

2017 - ongoing

- Development and maintenance of analysis modules (R and QML).
- Contributing to the core codebase and development framework (C++, javascript, R, QML).
- Leading collaborative projects (e.g., implementation of JASP syntax mode), supervising new team members.
- Writing documentation and guidelines.
- Writing educational and popularization materials.

Researcher

PLESS, Prague (Czech republic)

2013 - 2016

Designing, collecting, and analysing social science experiments.

Analyst (internship)

UX Focus, Prague (Czech republic)

2015 - 2016

Collecting and analysing eye-tracking data for marketing purposes, preparing documentation for communication with clients.

Software developer (internship)

QED group, Prague (Czech republic)

2014

Writing data visualisation software used to communicate with clients.

TEACHING

Leading individual internship/thesis projects

University of Amsterdam, the Netherlands

2018 - ongoing

Supervised bachelor and master students; projects mostly focused on Bayesian modeling, analysis of eye-tracking data, designing, running, and analyzing eye-tracking experiments.

Bayesian Modeling for Cognitive Science

University of Amsterdam, the Netherlands

2016 - ongoing

Annual workshop organized by JASP.
Organization and teaching support.

Theory and Practice of Bayesian Hypothesis Testing

University of Amsterdam, the Netherlands

2016 - ongoing

Annual workshop organized by JASP.
Organization and teaching support.

Bayesian Statistics

University of Amsterdam, the Netherlands

2022 - 2023

Bachelor in Psychology Course
Organization and teaching support.

PROGRAMMING

R

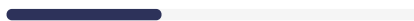

Git

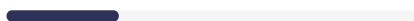

Stan

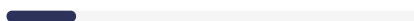

L^AT_EX


QML


Python


Go


JavaScript


C++


Rust


Theory development in Cognitive Science University of Amsterdam, the Netherlands

2021 - 2022

Research Master in Psychology Course
Organization and teaching support.

Bayesian Inference for Psychological Science University of Amsterdam, the Netherlands

2021 - 2022

Research Master in Psychology Course
Organization and teaching support.

Bayesian Inference for Psychological Science University of Amsterdam, the Netherlands

2017 - 2018

Research Master in Psychology Course.
Organization and teaching support.

CONFERENCES

ECVP - European Conference of Visual Perception Paphos, Cyprus

2023

Presentation: WALD-EM: Wald accumulation of location and durations of eye movements

MathPsych Conference Amsterdam, the Netherlands

2023

Presentation: Hidden Markov models of evidence accumulation
Helping in conference organization

ECEM - European Conference of Eye Movements Leicester, UK

2022

Symposium: Characterising Eye Movement Events with an Unsupervised Hidden Markov Model
Helped organize symposium and talk, did not attend the conference

Understanding Vision Conference Online conference

2021

Presentation: WALD-EM: Wald accumulation of location and durations of eye movements

IOPS Winter Conference Leiden, the Netherlands

2019

Presentation: Modeling individual differences in infant habituation

ECEM - European Conference of Eye Movements Alicante, Spain

2019

Presentation: Clustering eye movement transitions reveals latent cognitive strategies

AWARDS & GRANTS

NWO Talent Grant Dutch Research Council (NWO), the Netherlands

2018

Inferring cognitive strategies from eye-movements: A Bayesian approach
A grant that entirely funded my PhD at the University of Amsterdam.
€225,000

Self-Control: Disentangling Inhibition and Initiation
Awarded to the PLESS lab to conduct an experiment described in my bachelor thesis.
60,000 CZK (≈ €2,500)

SELECTED PUBLICATIONS

- Kucharský, Š., Tran, N.-H., Veldkamp, K., Raijmakers, M., & Visser, I. (2021). Hidden Markov models of evidence accumulation in speeded decision tasks. *Computational Brain & Behavior*, 4, 416–441.
- Kucharský, Š., van Renswoude, D., Raijmakers, M., & Visser, I. (2021). WALDEM: Wald accumulation for locations and durations of eye movements. *Psychological Review*, 128(4), 667.
- Kucharský, Š., Wagenmakers, E.-J., van der Bergh, D., & Ly, A. (2023). Analytic posterior distribution and Bayes factor for Pearson partial correlations. *TEST*. (under review)
- Kucharský, Š., Zaharieva, M., Raijmakers, M., & Visser, I. (2022). Habituation, part II: Rethinking the habituation paradigm. *Infant and Child Development*, e2383.
- Visser, I., Kucharský, Š., Levelt, C., Stefan, A. M., Wagenmakers, E.-J., & Oakes, L. (2023). Bayesian sample size planning for developmental studies. *Infant and Child Development*, e2412.
- Zaharieva, M., Kucharský, Š., Colonnese, C., Gu, T., Jo, S., Luttenbacher, I., ... others (2021). Habituation, part I: Design choices in the infant habituation paradigm. A pre-registered crowd-sourced systematic review and meta-analysis. *Infant & Child Development*. (Stage I RR accepted, Stage II in progress)

EXTRACURRICULAR

- I took part in the Junior Researcher Programme, cohort 2016-2017.
- I was an external statistical consultant in project ELDEL and its Czech branch.
- I consulted the Czech national film archive (NFA) with statistical analysis of their data.
- I am enthusiastic about **programming**. I like to learn new programming languages and paradigms and do small projects for fun. I am especially interested in modern languages like Rust and Go(lang) and their focus on runtime safety.
- I love **football** (soccer) and follow Arsenal F.C. I like to educate myself in football data analytics and how statistics can improve footballing clubs become more efficient.