David Černý

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Summary

- Computational researcher with an extensive background in data analysis, training in Bayesian and frequentist statistical techniques, and comprehensive expertise in model development, implementation, and testing
- 8 years of experience developing streamlined, reproducible, and extensible computational pipelines tackling all stages of the data analysis process, from input cleanup and pre-processing to results visualization
- Author of 9 peer-reviewed publications in quantitative biology stemming from both independent and collaborative research projects; active co-developer of multiplatform, open-source software for Bayesian inference
- Strong presentation, communication, and mentoring skills honed by six years of teaching at undergraduate and graduate levels

Education

2024	**University of Chicago**
	Ph.D. candidate in Geophysical Sciences
	Neubauer Family Distinguished Doctoral Fellowship ($45,000)
	Dissertation title: *Novel approaches to the parametric inference of phylogenies and diversification rates from fossil data*
	Relevant coursework: numerical linear algebra
2018	**University of California, Los Angeles**
	B.S. in Ecology, Behavior, and Evolution (with Honors)
	Grade point average: 3.804
	Relevant coursework: statistics and statistical programming, probability theory, multivariate calculus

Skills

Programming	R (expert), C++ (intermediate), Python (basic), MATLAB (basic)
Computing	Shell scripting, text editing and regular expressions (vim, sed, awk), version control (git), software development (Xcode, RStudio, gdb), batch processing (Slurm)
Quantitative	Hypothesis testing, maximum-likelihood and Bayesian parameter estimation, machine learning (regression trees), model validation, model selection, adequacy testing
General	MS Offfice suite, document markup (Markdown, XML, LaTeX), raster graphics (GIMP)
Language	Czech (native), English (fluent), Spanish (conversational), Russian (basic)
Communication	Technical writing and editing, tutorial design, data visualization, project management

Professional Experience

November 2019–Present **RevBayes development team**. *Scientific software developer*

- Joined the development team of RevBayes, an open-source software platform for Bayesian inference with a C++ backend and a scripting interface utilizing a custom domain-specific programming language
- Added functionality to the code base, contributed bug fixes and feature enhancements, performed code review, developed tutorials, designed validation tests, improved documentation, and resolved user-reported issues
- Led efforts to better understand and respond to user priorities by conducting a detailed bibliometric study

October 2018–June 2024   **University of Chicago**. *Graduate student researcher* (Chicago, IL)

- Conceived, implemented, and completed multiple research projects including interdisciplinary collaborations, resulting in 4 first-author publications and 10+ presentations at national and international conferences
- Devised a novel Bayesian method for merging phylogenetic trees, provided a performant open-source C++ implementation, and conducted comprehensive validation using simulation-based calibration checking
- Compiled large new datasets, assembled well-documented analytical pipelines employing a variety of software tools and statistical techniques, and created high-grade data visualizations using R graphics libraries

July–September 2017   **Centre for Genomic Regulation (CRG)**. *Research intern* (Barcelona, Spain)

- One of 5 international applicants selected for a paid bioinformatics internship under the supervision of CRG staff scientists
- Pursued an independent research project aiming to detect signatures of positive selection in phylogenetic trees inferred from protein-coding DNA sequences
- Gained experience using vectorization and specialized libraries to write performant R code capable of processing large amounts of data

Additional Experience

October 2018–Present   **University of Chicago**. *Instructor and teaching assistant* (Chicago, IL)

- Served in a variety of instructional roles for 6 different courses over 14 academic terms, including as a lecturer of record for fully remote and flipped-classroom courses
- Facilitated weekly lab activities and discussions, graded assignments, and helped students develop quantitative reasoning and technical writing skills by providing detailed feedback
- Demonstrated strong communication skills by conveying complex concepts to audiences of different sizes and expertise levels

July–August 2016,   **Ahold Delhaize**. *Legal Department intern* (Prague, Czech Republic)
July–August 2015

- Reviewed English translations of supplier contracts and other legal documents for the Czech subsidiary of a large international retailer
- Analyzed market competition trends in terms of store number and total retail area, resulting in a presentation given by the Legal Department to the Executive Board

Certificates, Grants, Awards

In progress	Tensorflow 2 and Keras Deep Learning Bootcamp, Udemy.
May 2022	SSB Graduate Student Research Award, Society of Systematic Biologists. $3,000
June 2016	Whitcome Undergraduate Summer Research Fellowship, Department of Ecology and Evolutionary Biology, UCLA. $3,000