

Martin Beneš

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Experience

Since 09 2021

Research Assistant, Security and Privacy Lab, Rainer Böhme
UNCOVER: EU project development of steganalysis framework. End users LEAs. Working with confidential information.
jpeglib [Python, C]: Python envelope for C library libjpeg.
conseal [Python]: Python package with simulators of modern steganographic algorithms.
Steganographic demo [C++]: Prototype of real-time steganography in video stream, presented at events InDay Students and LNDF.

11 2020 – 06 2021

QA Engineer, AB TaxiCaller Nordic
Driver app [React.js]: Tester, iterative development.
Scrum master [Jira]: Sprint planning.
QA engineer [Node.js, Jenkins]: Integration and deployment testing.

06 – 09 2020

Data Engineer, M/F Ratio of current excess mortality, Krzysztof Bartoszek
covid19sweden, **covid19czechia**, **covid19poland**, **eurostat_deaths** [Python]: Automated data collection and cleansing.
waybackmachine [Python]: Fetching historical snapshots of a page from archive.org.

04 – 05, 08 – 09 2020

Core-team Contributor, COVID-19 Data Hub [10.21105/joss.02376], Emanuele Guidotti
Data Hub [R]: Covid-19 data collection and cleaning.
covid19dh [Python]: Python envelope of the data hub.

09 2019 – 03 2020

Backend Developer, AB TaxiCaller Nordic
Revenu Quebec certification [Java/Android]: Certification of sales-recording system for mandatory billing.
BloodHub integration [Node.js]: Integration of blood delivery system.
API definition [OpenAPI]: JSON schema for API - Jackson, TypeScript middleware request checker, documentation.
Maps [Python, MariaDB, Node.js]: OpenStreetMap solution: Map tiles server, geocoding (Pelias), address interpolation.

01 2017 – 01 2019

Software Developer, Artisys s.r.o.
Air-traffic control display panel [C++/Qt5]: Display panel for visualizing the radar targets.

Education

Since 10 2021

PhD., Computer Science, University of Innsbruck <GPU 3.82>
Paper {IH&MMSec 2022}: Know Your Library: How the libjpeg Version Affects Compression and Decompression Results.
Paper {EUSIPCO 2022}: The Effect of the JPEG Implementation on the Cover-Source Mismatch Error in Image Steganalysis.
Review for IEEE Transactions on Information Forensics and Security.
Summer school Privacy-Preserving Machine Learning (IACR).
Summer school Steganography and Steganalysis. *Lecturer. Team lead in CTF challenge.*
Paper {WIFS 2023}: JPEG Steganalysis Using Leaked Cover Thumbnail. *Carried out on Vienna Scientific Cluster (#301).*
Review for IEEE Signal Processing Letters.
Digitale Zaunertinte: Steganography workshop during event Tag der MIP. *Lecturer.*

06 2021

MSc., Statistics and Machine Learning, Linköping University <GPU 3.09>
Master thesis [Python] {NordicMathCovid Oslo Workshop 2023}: HMM modelling of the spread of the SARS-CoV-2. <A>
Research project [Python]: Covid-19 regional comparison. <A>
Teacher assistant [R]: Advanced R Programming, Computational Statistics, Machine Learning.

08 2019

Bc., Information Technology, Brno University of Technology <GPU 3.11>
Bachelor thesis Counting People Using PIR Sensor [Arduino/C++, Python]: Cooperate research of FHV / FIT BUT.
Erasmus Computer Science, FH Vorarlberg. <GPA 3.68>

06 2016

Gymnázium Brno – Řečkovice. High school, final *maturita* exam: Czech, Math, IT. <cum laude>

Skills

Data science Statistical and probabilistic modelling · Deep learning · Computer vision · Forecasting · Data mining, analysis and visualization
MLOps · Data engineering · SQL (MySQL, PostgreSQL, SQLite) · NoSQL (MongoDB, Redis) · Database modelling (UML)
Signal processing (coding) · Statistical testing · Stochastic optimization · Continuous and discrete simulation
Programming Python · R · C/C++ · Parallel programming · Acceleration (GPU, multi-GPU, JIT) · HPC (Slurm)
Networking · Web (Node.js, React.js, web scraping) · IoT (Arduino, Raspberry Pi) · Hardware (FPGA/VHDL, x86, SSE/AVX)
Git · Bash · Cloud computing (AWS, Docker) · Scrum/Jira
Computer security Steganography and steganalysis · Digital forensics · Cryptography
Audiovisual skills TeX/Tikz · Video editing (DaVinci, Vegas) · Sound processing (Cubase, Audacity) · Graphics (CorelDraw/Inkscape, Adobe Photoshop)
Languages Czech/Slovak (mother tongue) · English (C1) · Polish (~B2) · Russian (~B2) · German (B1) · Swedish (B1) · French (~A2)
Other skills Academic research · Academic and technical writing · Presentation skills · Teaching and mentoring · Intercultural communication
Responsibility · Time management · Problem solving · Adaptivity · Creativity · Social skills · Teamwork
Driving license B (car) · Hitchhiking · Ukulele

Miscellaneous projects and work

01 2023

Meeting organization: Organization of a major EU project meeting with 50 attendants.

08 2022

Jura jede [D3.js/jQuery]: Data dashboard.

03 2021, 10 2021

Externist, University of Neuchâtel: Database merging.

11 2020

Externist, CEVRE Consultants, s.r.o.: Facility documentation for BREEAM certification.

09 2018 – 12 2019

Lecturer, Top Learning s.r.o.: Individual teaching – math, physics. Preparing study materials.

09 2013 – 03 2018

Sound Engineer, ZiveOzvuceni.cz: Installation and configuration of sound systems on various live events.

06 – 09 2018

Manager, I Love Sugar: Work & Travel J1 program in USA. Management of stock and organization of employees.

08 2016/17/18

ViceManager, Camping Transit, GenAgro a.s.: Management of temporary camping for grand prix event. Organization of employees.