

# Martin Beneš

mbernes.me |  martinbenes1996 | martinbenes1996@gmail.com |  martinbenes1996 | +420 602 485 715 | ORCID 0000-0003-0008-7524

## Experience

- 07 – 09 2024 **Intern/R&D**, project *Stealthy Pixels*, Blindspot Solutions s.r.o.  
**tatouage** [Python]: Python package implementing modern watermarking.
- Since 09 2021 **Research Assistant**, Security and Privacy Lab, University of Innsbruck  
**UNCOVER**: EU Horizon 2020 project. Development of a steganalysis framework for law-enforcement agencies.  
Working with confidential information. Organization of a project meeting with 50 attendants.  
**conseal**, **sealwatch** [Python]: Python packages implementing modern steganography and steganalysis.  
**jpeglib** [Python, C]: Python package enveloping C library libjpeg.  
**Workshop** Digital Magic Ink during event Tag der MIP and at Gymnázium Brno-Řečkovice. *Lecturer*.  
**Workshop** [C++] InDay Students and LNDF, presenting a prototype of real-time steganography in a video stream.
- 06 – 09 2020 **Data Engineer**, project *M/F Ratio of current excess mortality*, Department of Computer and Information Science, Linköping University  
**covid19sweden**, **covid19czechia**, **covid19poland**, **eurostat\_deaths** [Python]: Automated data collection.  
**waybackmachine** [Python]: Fetching historical snapshots of a page from archive.org.
- 05 – 06, 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 – 06 2021 **Backend Developer**, later **QA Engineer/Scrum master**, AB TaxiCaller Nordic  
**Maps** [Python, MariaDB, Node.js]: OpenStreetMap solution: Map tiles server, geocoding (Pelias), address interpolation.  
**BloodHub integration** [Node.js]: Integration of blood delivery system.  
**Revenu Quebec certification** [Java/Android]: Certification of sales-recording system for mandatory billing.  
**Driver app** [React.js]: Tester, iterative development.  
**API definition** [OpenAPI]: JSON schema for API - Jackson, TypeScript middleware request checker, documentation.  
**Scrum master** [Jira]: Sprint planning.  
**QA engineer** [Node.js, Jenkins]: Integration and deployment testing.
- 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 <GPA 3.64>  
**Paper** (IEEE WIFS 2024): Kerckhoffs in Prison: A Study of the Steganalyst's Knowledge.  
**Paper** (ACM IH&MMSec 2024): Exploring Diffusion-inspired Pixel Predictors for WS Steganalysis. *Carried out on VSC cluster (#301)*.  
**Paper** (EURASIP JIS 2024): Cover-source Mismatch in Steganalysis: Systematic Review.  
**Paper** (IEEE WIFS 2023): JPEG Steganalysis Using Leaked Cover Thumbnail. *Carried out on VSC cluster (#301)*.  
**Paper** (EURASIP EUSIPCO 2022): The Effect of the JPEG Implementation on the Cover-source Mismatch Error in Image Steganalysis.  
**Paper** (ACM IH&MMSec 2022): Know Your Library: How the libjpeg Version Affects Compression and Decompression Results.  
**Reviewer** for Springer ESORICS · IEEE TIFS · IEEE SPL · IEEE TDSC  
**Summer school** Steganography and Steganalysis. *Lecturer. Team lead in CTF challenge*.  
**Summer school** Privacy-Preserving Machine Learning (IACR).
- 06 2021 **MSc., Statistics and Machine Learning**, Linköping University <GPA 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 <GPA 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 · Optimization (discrete, continuous)
- Programming Python · R · C/C++ · Parallel programming · Acceleration (GPU, multi-GPU, JIT) · HPC (Slurm) · Bash  
Web (Node.js, jQuery, web scraping) · Networking · Cloud computing (AWS, Terraform, Docker)  
IoT (Arduino, Raspberry Pi) · Hardware (FPGA/VHDL, x86, SSE/AVX) · Project management (Scrum/Jira, Git, Jenkins)
- Computer security Steganography and steganalysis · Digital forensics · Digital watermarking · Cryptography
- Audiovisual skills TeX/Tikz · Graphics (CorelDraw/Inkscape, Adobe Photoshop) · Video production and editing (GoPro, DaVinci, Vegas)  
Sound processing (Cubase, Audacity) · Music theory
- Languages Czech/Slovak (native) · English (C1/CAE) · German (B2/ÖSD) · Russian (~B2) · Polish (~B2) · 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) · Ultralight backpacking · Bass guitar

## Miscellaneous projects and work

- 08 2022 **Jura jede** [D3.js/JQuery]: Data dashboard.
- 03 2021, 10 2021 **Externist** [Python], 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 2016/2017/2018 **ViceManager**, Camping Transit, GenAgro a.s.: Management of temporary camping for grand prix event. Organization of employees.