Laszlo Treszkai

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Deep understanding of the mathematics of statistics and machine learning, high-dimensional visualization abilities; theoretical and practical experience in the design, implementation, and evaluation of ML algorithms; proficient in English and B2 level in German; well-versed in Python, C, PyTorch, scikit-learn, interested in probabilistic and functional programming languages, and can quickly get up to speed in anything else.

EDUCATION

MSc: Artificial Intelligence 2017 – 2018
University of Edinburgh, United Kingdom with distinction (83%)
Courses in ML, deep learning, decision making, probabilistic modeling and natural language processing.
Master's thesis: *Likelihood-based Planning with Loops*, supervised by Vaishak Belle, IJAR publication pending.

Self-taught mathematics and data science 2016 – 2017
Linear algebra, theory of computation, statistics, data analysis and modeling, data visualization, Haskell.

BSc and **MSc**: Electrical Engineering (Embedded Information Systems) 2007 – 2013
Budapest University of Technology, Hungary (MSc GPA: 4.4 of 5.0)

PROFESSIONAL EXPERIENCE

Sclable Business Solutions GmbH. *AI Research Engineer* Nov 2018 – Mar 2019
- Document analysis with OCR: developed a system to combine results from multiple text recognition sources.
- Designed and implemented a Bayesian data modeling solution for a recommendation system.
- Used *Python*, *Docker*, *Tornado*, *PostgreSQL*, *SQLAlchemy*, *Pandas*, *NumPy*, *unittest*, *OpenCV*.

TTControl GmbH. *Embedded Software Engineer* Apr 2014 – Mar 2016
The flagship HY-TTC 500 product – an IEC 61508 SIL 2 certified ECU.
- Developed software features in *C language* and *assembly*.
- Created testing tools and test cases in *Python*.
- Coordinated the *software testing*, led successful certification discussions with the TÜV.

Robert Bosch Kft. *Test Software Developer Intern* Aug 2010 – Dec 2010
Developed an automotive diagnostics software in *Python*, resulting in a fivefold decrease in test time.

PUBLICATIONS

A Correctness Result for Synthesizing Plans With Loops in Stochastic Domains 2019
First author of a paper on automated planning. Submitted at Int. J. of Approx. Reasoning, under revision.

treszkai.github.io (Explanatory and exploratory blog posts about mathematics, AI, and ML.) 2018 – ongoing
Evaluation of function calls in Haskell, *Paper summary: Inverse RL*, *Posterior sampling with MCMC*

Kristálytiszta elektronika ("Crystal Clear Electronics") 2018
Chapter 16: The timer module
Co-author of a *book* aimed at high school students on embedded hardware and software design.

FURTHER PROJECTS

BEST: Bayesian Estimation Supersedes the t-test Aug 2019
Bayesian estimation made simple: Python package to serve as a drop-in replacement of t-tests.
- Fit t-distributions on one-dimensional data with *PyMC3*, and plot posteriors with Matplotlib.
- Full documentation at best.readthedocs.io, generated with *Sphinx*.

Estimating the uncertainty of deep neural networks Jan – May 2018
- Experiments with different methods to improve calibration, such as deep ensembles or test-time dropout.

BME Formula Racing Team 2011 – 2013
Group Leader of Low Voltage Electronics (FREC-003 race car), Hardware+Firmware Engineer (FRC-005)
- *Designed* the low voltage *system of 9 ECUs* and *30 sensors* in a Formula Student car.
- *Lead a group of 7 students* (mechanical, hardware and firmware engineers).
- Engineering Design 1st place, Energy Efficiency 1st place at the international FSH 2013.