






# Curriculum vitae

## PERSONAL INFORMATION

### Martin Fajčík

 Bozetechova 2, 61600 Brno (Czech Republic)  
 +421915804084  
 ifajcik@fit.vutbr.cz  
 <https://mfajcik.github.io/>  <http://www.fit.vutbr.cz/~ifajcik>

Sex Male | Date of birth 26/05/1993 | Nationality Slovak

## WORK EXPERIENCE

01/11/2017–Present

### PhD Student / Natural Language Processing Researcher

Faculty of Information Technology, Brno University of Technology  
Božetěchova 1/2, 61266 Brno (Czech Republic)  
<http://www.fit.vutbr.cz>

Currently I am working on my PhD thesis related to open-domain question answering (QA). In particular, the aims of my thesis are:

- To create a document embeddings suitable for open-domain QA pipeline.
- To create machine comprehension system, that will be able to aggregate the evidence from retrieved documents and seek the relevant answer using these new type of embeddings.
- To explore the possibilities of data augmentation in QA domain.

Apart from my main research, I am participating in several industrial projects:

- The first project is aimed on improvement of automated advertisement provided by company ROI Hunter a.s.. In the project, I have already came up with working solution for automatic extraction of attributes from product feeds. I have employed a several neural models to classify product into categories based on in e-shop text feed, made a system that finds which attributes are relevant for each item in the e-shop, or extracts/classifies these relevant attributes.
- The second project related to research and development of diagnostic unit for forming machines under the concept of Industry 4.0. Our system aims at development of preemptive detection of bearing malfunction in designed diagnostic unit from the vibration signal.

**Business or sector** Professional, scientific and technical activities

01/06/2015–31/10/2017

### Java/Python developer

Codasip Ltd.  
Božetěchova 1/2, 61200 Brno (Czech Republic)  
[www.codasip.com](http://www.codasip.com)

Development of Eclipse IDE plugins related to

- Static analysis
- Content assist
- Quick fix feature (Intelligent code fixing)

in CodAL language editor.

I also worked on

- Java API design
- lots of Python and Shell scripts
- Javascript frontends for data visualization.

Later I have worked on my master's thesis here.

**Business or sector** Professional, scientific and technical activities

## EDUCATION AND TRAINING

14/06/2012–24/06/2017

## Master's Degree

EQF level 7

Faculty of Information Technology, Brno University of Technology  
Božetěchova 1/2, Brno, 612 66 Brno (Czech Republic)  
<http://www.fit.vutbr.cz/>

Field: Intelligent Systems.

The main subjects were:

- **Soft Computing** – Neural Networks, Genetic Algorithms, Evolutionary Algorithms, Rough set theory, Fuzzy logic theory, Chaos Theory
- **Agents and Multiagent Systems** – Agents, Environments, Agent Architectures, Modal, Epistemic, Temporal, CTL and BDI logics, agent oriented programming (AOP) and AOP languages, Negotiation, Argumentation, Voting, MAS modelling
- **Game Theory** – Two player games with zero-sum/nonzero-sum payoffs, Nashe's lemma of equilibrium existence in games with finite sets of strategies, Sequential game with perfect/imperfect information, Cooperative games and bargaining, Repeated games, Social choice, public voting: Arrow's paradox, Auctions
- **Speech Signal Processing** – Speech production and perception, Phonetics, Linear-predictive model, Cepstral analysis, Mel-frequency cepstrum, LPC encoding-decoding, Speech recognition - dynamic programming DTW, hidden Markov models, Speech synthesis
- **Knowledge Discovery in Databases** – Data Preparation, OLAP, Mining frequent patterns, Multi-level association rules, Classification and prediction, Cluster analysis
- **Functional and Logic Programming** – Lambda calculus, Haskell, Prolog

## Master's Thesis:

The goal of my master's thesis was the development of new technique that used recurrent neural network to accelerate automated hardware verification of processors. I presented the achieved results at Microprocessor Test and Verification Conference 2017. The proceedings from conference were published by IEEE (see Publications).

01/09/2008–31/06/2012

## Graduation

EQF level 4

Gymnázium Milana Rúfusa  
Ul. J. Kollára 2, 96501 Žiar nad Hronom (Slovakia)  
<https://gymziar.edupage.org/>

Standard High School Education (Math, Physics, Computer Science, Slovak language and literature, English language, French language)

## PERSONAL SKILLS

## Mother tongue(s)

Slovak, Czech

## Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
High School Graduation at Gymnasium (B2 Level)					

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

## Communication skills

During the summers at the university, I worked at the Museum of Coins and Medals in my hometown, Kremnica. I have guided lots of local and foreign tourist groups and helped with the organization of special events at the museum.

## Job-related skills

I worked mostly in following programming languages/frameworks:

- Python, Java, C, C++, Javascript, Shell, Prolog, x86 Assembly, SystemVerilog, Haskell

■ Pytorch, Tensorflow, Keras, spacy, nltk, pandas, , eigen

Other skills I can play drums.

Driving licence AM, B1, B

#### ADDITIONAL INFORMATION

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**Publications** FAJČÍK Martin, ZACHARIÁŠOVÁ Marcela and SMRŽ Pavel. **Automation of Processor Verification Using Recurrent Neural Networks**. In: *2017 18th International Workshop on Microprocessor and SOC Test and Verification (MTV)*. Austin, Texas: Institute of Electrical and Electronics Engineers, 2017, pp. 15-20. ISBN 978-1-5386-3351-9.

Fajcik, M., Burget, L. and Smrz, P., 2019. **BUT-FIT at SemEval-2019 Task 7: Determining the Rumour Stance with Pre-Trained Deep Bidirectional Transformers**. *arXiv preprint arXiv:1902.10126*.