

Bruno Gavranović

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Computer Science student passionate about functional programming and machine learning

Projects

Framework for automatic differentiation

Zagreb, Croatia

OPEN SOURCE PROJECT

Mar. 2017. - Jan. 2018.

- Developed an efficient, general TensorFlow-like framework for backpropagation in Python
- Implemented dynamic computational graphs, higher order derivatives, tensor differentiation and more

Reimplemented a dozen of state of the art deep learning papers

Zagreb, Croatia

HIGHLIGHTS INCLUDE

Feb. 2017. - Present

- **Differentiable Neural Computer:** DeepMind's 2016 Nature paper, one of the most sophisticated neural network architectures
- **Generative Adversarial Networks:** several variants: DCGAN, Wasserstein GAN, CycleGAN and others
- **Backprop as Functor:** Haskell implementation of a category-theoretic formulation of neural networks
- **Decoupled Neural Interfaces:** a novel approach to distributed training of networks

Experience

Hackmind

Berlin, Germany

RESEARCH FELLOW

Jan. 2018. - April 2018.

- 3 month paid fellowship in startup building
- Applied state of the art deep learning knowledge in exploring the space of product ideas

Petnica Summer School of Machine Learning

Petnica, Serbia

INVITED SPEAKER, MENTOR

July 2017.

- Held a lecture and workshop on Generative Adversarial Networks
- Led several teams in implementing various neural network architectures

TakeLab (Text Analysis and Knowledge Engineering Lab)

Zagreb, Croatia

MASTER STUDENT UNDER THE SUPERVISION OF ASSOC. PROF. DR. SC. JAN ŠNAJDER

Sept. 2015 - present

- Research laboratory specializing in Natural Language Processing, Machine Learning and Text Analytics
- Completed several projects as a part of the university curriculum

Education

Faculty of Electrical Engineering and Computing, University of Zagreb

Zagreb, Croatia

MASTER STUDIES, COMPUTER SCIENCE

2016. - present

UNDERGRADUATE STUDIES, COMPUTER SCIENCE

2013. - 2016.

Additional education, awards & recognition

2018. **Participant**, Applied Category Theory workshop

Leiden, Netherlands

2017. **AI Grant finalist**, Reducing research debt by clearly communicating ideas in deep learning

2010. - 2017. **Participant**, Various competitions in programming, physics and machine learning

2012. **Honorable mention**, 6th International Olympiad on Astronomy and Astrophysics

Rio de Janeiro, Brazil

Knowledge & Abilities

TECHNICAL SKILLS

- **Programming languages:** Haskell, Python, C/C++, Java
- **Other:** reading research papers, linux, git, vim, zsh, PyTorch, TensorFlow

LANGUAGES

- English (C1.1), Spanish (B1), Croatian (Native)

Interests & Activities

Interests Category Theory, Optimizing workflow, Self-improvement, Piano, Guitar

Alumni of BEST (Board of European Students of Technology)

Misc. Creator of a trending Ethereum-based decentralized application

Member of the winning team in the Red Bull Gravity Challenge

Zagreb, 2015.