

— EDUCATION —

PH.D. IN COMPUTER SCIENCE – BME, TUD AND MIT ————— 2015 – PRESENT

Massachusetts Institute of Technology (MIT)

Cambridge, MA, USA

- Invited Research Fellow
- Fulbright Visiting Student Researcher
 - Group: The Network Coding and Reliable Communications Group; Supervisor: Prof. Murel Médard
- Project 1: Constructing analytic model for studying throughput of multi-source source, single sink networks [2]
 - Techniques: Network coding, Hidden Markov model, Probability Generating Function
- Project 2: Designing mutli-source protocols and measuring their throughput through YouTube video downloads
 - Measurements run for 8 months on multiple continents
 - Technologies: Matlab, WebRTC, Chrome/Firefox extensions, TypeScript, NodeJs, mocha, Docker, Linux, Amazon Web Services
- Project 3: Improving Google QUIC protocol with network coded forward error correction [1]

2017 – 2018

Dresden University of Technology (TUD)

Dresden, Germany

- Participating in the dual Ph.D. program between BME and TUD
 - Group: Deutsche Telekom Chair of Communication Networks; Supervisor: Prof. Frank Fitzek
- Project 1: Investigating Android energy consumption Jul 2017 – Aug 2017
- Project 2: Study and Deployment of Mobile Edge Cloud for Tactile Internet using 5G Gaming application [5] Jul 2016 – Sep 2016
 - Presented at: 5G Summit'16, IFA'16, Germany and CES'17, USA
 - Technologies: HTML5, Typescript, NodeJs, Docker, Linux, Amazon Web Services
- Project 3: Network coding enhanced browser based Peer-to-Peer streaming [7] [6] [4] Jul 2015 – Sep 2015
 - Presented at: 5G Summit'15, 5G Summit'16, Germany and CES'17, USA
 - Technologies: Typescript, NodeJs, WebRTC, Docker, Linux

Budapest University of Technology and Economics (BME)

Budapest, Hungary

- Home institute (with TUD)
 - Group: Department of Automation and Applied Informatics; Supervisor: Dr. Péter Ekler
- Focus: Network Coding, distributed systems, edge cloud systems, web applications

M.SC. IN SOFTWARE ENGINEERING – BME ————— 2013 – 2015

Budapest University of Technology and Economics (BME)

Budapest, Hungary

- Group: Department of Automation and Applied Informatics; Supervisor: Dr. Péter Ekler
- Honours degree, degree GPA: 4.9 / 5.0
- Research project on investigating Android energy consumption
- Thesis: The Analysis of Distributed Data Sharing with Network Coding Technology [8]

B.SC. IN IN SOFTWARE ENGINEERING – BME AND KI ————— 2009 – 2013

Budapest University of Technology and Economics (BME)

Budapest, Hungary

- Language of the program: German
- Excellent degree, degree GPA: 4.65 / 5.00
- Research project on creating simulators for cellular networks

Karlsruhe Institute of Technology (KIT)

Karlsruhe, Hungary

- Part of BME-KIT dual degree program Oct 2011 – Feb 2012

— SELECTED PROFESSIONAL EXPERIENCES —

Lecturing at BME

Budapest, Hungary

2010 – Present

- Assistant Lecturer and Teaching Assistant positions
- Lecturing in 7 subject in English, Hungarian and German.
- Main areas: JavaScript/TypeScript, Angular, Android, other client side technologies, basics of informatics and programming (C, C++)
- Supervising M.Sc., B.Sc. theses, Students projects on 39 topics, including P2P systems, network coding and web development (PHP, JavaScript, Angular)

BME-AutSoft Ltd.

- Project Manager and technical consultant
- Project: VR / AR offloading to Mobile Edge Cloud for low latency 5G gaming application [3]
 - Presented at CeBit'17, Germany and CES'18, USA
- Part-time Software Engineer
- Working in a team of 3-4 people
- Main projects at Google Play: Alpha online, E-course teacher, E-tutor

Budapest, Hungary

Feb 2017 – Jun 2017

2014 – 2016

Gravity Rock Solid Recommendation

- Junior Software Engineer
 - Working in a team of 3-4 people
 - Developing frontend in HTML5, Java and C#

Budapest, Hungary

Jul 2013 – Sep 2013

Jul 2012 – Sep 2012

Jul 2011 – Sep 2011

Other Projects

- Creator of PiGallery2 (github.com/bpatrik/pigallery2)
 - Focus: A photo gallery with heavily optimized, feature rich backend to run on a Raspberry Pi and a carefully designed UI
 - 46 945 LOC
 - Technologies: TypeScript, Angular, NodeJS, Mocha, Karma, Travis CI, Docker
- Online Calendar and Photobook editor and webshop (www.fotokonyvexpressz.hu)
 - Main developer and manager
 - Responsible for 18 200 LOC
 - Technologies: PHP, TypeScript, Sql

2016 – Present

2014 – 2017

— SELECTED PUBLICATIONS AND PATENTS (8 out of 16) —

PATENTS

- [1] M. Médard, L. Janoki, Patrik J. Braun, “System and Technique for Generating, Transmitting and Receiving Network Coded (NC) QUICK UDP Internet Connections (QUIC) Packets”, PCT/US18/59340, Sep 2018.

PUBLICATIONS

- [2] Patrik J. Braun, D. Malak, M. Médard, P. Ekler, “Multi-source Coded Downloads”, in *IEEE ICC 2019*, Shanghai, China, Apr 2019.
- [3] Robert S. Schmoll, S. Pand, Patrik J. Braun, Frank H.P. Fitzek, “Demonstration of VR / AR offloading to Mobile Edge Cloud for low latency 5G gaming application”, in *CCNC 2018*, Las Vegas, USA, Jan 2018.
- [4] Patrik J. Braun, M. Sipos, P. Ekler, Frank H.P. Fitzek, “On the Performance Boost for Peer To Peer WebRTC-based Video Streaming with Network Coding”, in *IEEE International Conference on Communications, ICC 2017*, Paris, France, May 2017.
- [5] Patrik J. Braun, S. Pand, Robert S. Schmoll, Frank H.P. Fitzek, “On the Study and Deployment of Mobile Edge Cloud for Tactile Internet using a 5G Gaming application”, in *IEEE CCNC 2017*, Las Vegas, USA, Jan 2017.
- [6] Patrik J. Braun, P. Ekler, Frank H.P. Fitzek, “Demonstration of a P2P assisted video streaming with WebRTC and Network Coding”, in *14th IEEE Annual Consumer Communications & Networking Conference (CCNC)*, Las Vegas, USA, Jan 2017.
- [7] Patrik J. Braun, P. Ekler, Frank H.P. Fitzek, “Network coding enhanced browser based Peer-to-Peer streaming”, in *2016 IEEE International Conference on Systems, Man, and Cybernetics*, Budapest, Hungary, Oct 2016.
- [8] Patrik J. Braun, M. Sipos, P. Ekler, H. Charaf, “Increasing data distribution in BitTorrent networks by using network coding techniques”, in *European Wireless 2015: 21th European Wireless Conference*, Budapest, Hungary, May 2015.

— SELECTED HONORS AND AWARDS (9 out of 13) —

Fulbright scholarship to MIT (2018) • Rosztoczy scholarship to MIT (2018) • Demonstration Award at CCNC'17, Las Vegas (2017) [6] • The German Academic Exchange Service (DAAD) scholarship to KIT (2011) • 2x Fellowship granted by the Hungarian Republic (2011, 2014) • 2x Faculty scholarship at BME (2011, 2014)

— OTHER —

Languages: Hungarian (native) • English (C1 certificate) • German (B1 certificate)

Technical Skills: Typescript • HTML5 • Angular • jQuery • WebRTC • NodeJs • Docker • Android • Java • Network Coding • UML • GIT • \LaTeX • SQL

Soft Skills: Presentation • Management • Team leading

Interests: Competitive ballroom dancing • Photography • Video editing • Outdoor activities (skiing, hiking, biking, running)

[updated on 2019-02-11]