

BALÁZS EDVÁRD KREITH

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PERSONAL PROFILE

Experienced Software Engineer with a demonstrated history of working in the computer networking industry. Strong professional knowledge focused on Real-Time multimedia communication technologies (WebRTC, RTP, MPRTTP). Skilled in C, C++, C#, Java, Python and PHP.

PROGRAMMING SKILLS

Major C/C++, Python, Java, Javascript
Intermediate C#, Labview, Latex, MySQL, PL/SQL

TECHNICAL KNOWLEDGE

Major RTP, Multipath RTP, WebRTC, Multipath network protocols, Network Congestion Control Algorithms
Intermediate Storm, Docker, Git, QUIC

WORK EXPERIENCE

- 2016–* **Senior Software Engineer**, Callstats Oy, Finland
Technical skills: C, Python, Java, Javascript
- Design and develop client library in javascript to measure and analyze WebRTC conferences based on browser provided statistical information.
 - Develop algorithms to evaluate and approximate the user-perceived quality of a video conference.
 - Design and develop a time-critical, stateful and stream-oriented application in Java to analyze millions of measurements.
 - Lead a small team (3 member) to research and develop algorithms and reports regarding to video calls quality
 - Apply flow-based programming paradigm in software development for stream processing
- 2013–2016* **Software Engineer**, University of Debrecen, Hungary
Technical skills: C,C++11
- Design and develop a FEC-based congestion control algorithm for RTP
 - Design a coupled congestion control for Multipath RTP
 - Implement Multipath RTP protocol in Gstreamer
 - Design and develop an automated network testbed evaluating RTP congestion controls algorithm in various aspects and making reports.
 - Study, design and develop flow-based programming method in C,C++ and C#
- 2012–2013* **Software Engineer**, PEC Corp., Belgium
Technical skills: C, C++, C#
- Developed and maintained a system responsible for controlling battery tester devices running on a custom designed hardware platform, collecting data to Oracle database and analyze it using a .NET end-user application. Designed an algorithm organize tests in a warehouse.
- 2010–2012* **Software Engineer**, University of Debrecen, Hungary
Technical Skills: Labview, C
- Reduced the necessary computational resources by 97% as a result of optimization by applying a scheduler algorithm using 8 calculational blocks instead of the formerly used 296 to calculate correlation functions using multiple-tau scheme. The designed hardware correlator is capable of calculating ACF and XCF in real-time with the minimum sampling time of 50ns

and the maximal time resolution is 1s. I implemented this hardware correlator on FPGA card using Labview. In 2012 the algorithm was published in Review of Scientific Instruments.

EDUCATION

- 2013–2016 **Doctor of Philosophy (Ph.D.), Computer Science**
University of Debrecen, Department of Computer Science
Thesis: Congestion Control for Real-time Multimedia Systems
- 2010–2012 **Master of Science (MSc), Software Engineering**
University of Debrecen, Faculty of Computer Science
Thesis: Design and implement an FCS/FCCS hardware auto and crosscorrelator on FPGA
- 2006–2010 **Bachelor of Science (BSc), System Engineering**
University of Debrecen, Faculty of Computer Science
Thesis: Performance analysis on Oracle database

AWARDS & ACHIEVEMENTS

- 2016 Selected in Amazon hiring process
- 2012 Student Graduation speech
- 2009 Best Student Recognition award in University

PUBLICATIONS

- 2017 B. Kreith, V. Singh , J. Ott. FRACtAL: FEC-based Rate Control for RTP. InProceedings of the 2017 ACM on Multimedia Conference 2017 Oct 23 (pp. 1363-1371). ACM.
- 2012 G. Mocsár^(*) , B. Kreith^(*) , J. Buchholz , J. W. Krieger, E. Charbon , J. Langowski, Gy. Vámosi. Note: Multiplexed multiple-tau auto- and cross-correlators on a single FPGA; Review of Scientific Instruments; 2012
(*) Equal contributions

COMMUNICATION SKILLS

English: Professional working proficiency (**C1**)

German: Limited working proficiency (**B2**)

Finnish: Elementary proficiency (**A1**)

Hungarian: Native

HOBBIES

Playing piano, Running middle distance range