

Abdelhak Bentaleb

Curriculum Vitae

Contact Information

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Education

2015–present **Doctor of Philosophy**, *National University of Singapore (NUS)*, School of Computing, Department of Computer Science, Singapore.

- *Title*– Enabling optimizations of video delivery in HTTP adaptive streaming.
- *Advisor*– Prof Roger Zimmermann.
- *GAP*– 4.2/5.

2009–2011 **Master of Computer Science**, *University of Bordj Bou Arréridj*, Department of Computer Science, Algeria.

- *Major*– Networking & Multimedia.
- *Grading*– 15.5/20

2006–2009 **Bachelor of Computer Science**, *University of Larbi Ben M'hidi Oum El Bouaghi*, Department of Computer Science, Algeria.

- *Major*– Computer Science
- *Grading*– 14.3/20

Research Interest

Video Streaming Architecture, Content Delivery, Multimedia Systems, Computer Networks, Wireless Communication and Mobile Networking, Communication and Routing Protocols, Distributed Computing.

Publications

Conferences

- [1] **Abdelhak Bentaleb**, Ali C. Begen, Saad Harous, and Roger Zimmermann. "A Distributed Approach for Bitrate Selection in HTTP Adaptive Streaming." Proceedings of the 2018 ACM on Multimedia Conference. ACM, 2018.
- [2] **Abdelhak Bentaleb**, Ali C. Begen, and Roger Zimmermann. "Game Theory Based Bitrate Adaptation for dash.js Reference Player." Proceedings of the IEEE International Conference on Multimedia and Expo (ICME) 2018.

- [3] **Abdelhak Bentaleb**, Ali C. Begen, Saad Harous, and Roger Zimmermann . "Want to Play DASH? A Game Theoretic Approach for Adaptive Streaming over HTTP." Proceedings of the ACM Multimedia Systems Conference 2018.
- [4] **Abdelhak Bentaleb**, Ali C. Begen, and Roger Zimmermann. "SDNDASH: Improving QoE of HTTP Adaptive Streaming Using Software Defined Networking." Proceedings of the 2016 ACM on Multimedia Conference. ACM, 2016.
- [5] **Abdelhak Bentaleb**, Saad Harous, and Abdelhak Boubetra. "A new topology management scheme for large scale mobile ad hoc networks." 2015 IEEE International Conference on Electro/Information Technology (EIT). IEEE, 2015.
- [6] **Abdelhak Bentaleb**, Saad Harous, and Abdelhak Boubetra. "A weight based clustering scheme for mobile ad hoc networks." Proceedings of International Conference on Advances in Mobile Computing & Multimedia. ACM, 2013.
- [7] **Abdelhak Bentaleb**, Saad Harous, and Abdelhak Boubetra. "A New Weight Based Clustering Scheme For Mobile Ad Hoc Networks", UAE Forum on Information and communication technology research (ICTRF 2013), Abu Dhabi, UAE, 2013.
- [8] Hicham Lakhlef, **Abdelhak Bentaleb**, et al. "Cliques and clusters based hierarchical scheme for sensor networks partitioning." GCC Conference and Exhibition (GCC), 2013 7th IEEE. IEEE, 2013.
- [9] Hicham Debbi, **Abdelhak Bentaleb**, and Bilel Lounnas. "QoS Monitoring and SLA Violation Detection Approach based on Complex Event Processing in the Cloud". International Conference on Advanced Communication and Information Systems (ICACIS'12), Algeria, December 2012.

Journals

- [1] **Abdelhak Bentaleb**, Praveen Kumar Yadav, Wei Tsang Ooi, and Roger Zimmermann. "DQ-DASH: A Queuing Theory Approach to Distributed Adaptive Video Streaming." ACM Transactions on Multimedia Computing, Communications, and Applications (2018), Under Submission.
- [2] **Abdelhak Bentaleb**, Bayan Taani, Ali C. Begen, Christian Timmerer, and Roger Zimmermann. "A Survey on Bitrate Adaptation Schemes for Streaming Media over HTTP." IEEE Communications Surveys and Tutorials (2018).
- [3] **Abdelhak Bentaleb**, Ali C. Begen, and Roger Zimmermann. "ORL-SDN: Online Reinforcement Learning for SDN-Enabled HTTP Adaptive Streaming." ACM Transactions on Multimedia Computing, Communications, and Applications (2018).
- [4] **Abdelhak Bentaleb**, Ali C. Begen, and Roger Zimmermann. "QoE-Aware Bandwidth Broker for HTTP Adaptive Streaming Flows in an SDN-Enabled HFC Network." IEEE Transactions on Broadcasting (2018).
- [5] **Abdelhak Bentaleb**, Ali C. Begen, Roger Zimmermann, and Saad Harous. "SDNHAS: An SDN-Enabled Architecture to Optimize QoE in HTTP Adaptive Streaming." IEEE Transactions on Multimedia (2017).
- [6] **Abdelhak Bentaleb**, Saad Harous, and Abdelhak Boubetra. "A k-hop Scalable Management Scheme For Large Scale Mobile Ad Hoc Networks." Wireless Personal Communications (2016) : 1-33.

- [7] **Abdelhak Bentaleb**, Saad Harous, and Abdelhak Boubetra. "A scalable clustering scheme and its performance evaluation." *International Journal of Pervasive Computing and Communications* 10.1 (2014): 27-42.
- [8] **Abdelhak Bentaleb**, Abdelhak Boubetra, and Saad Harous. "Survey of clustering schemes in mobile ad hoc networks." *Communications and Network* 5.02 (2013):8
- [9] **Abdelhak Bentaleb**, Hicham Lakhlef, and Jean-Frédéric Myoupo. "Dynamic Source Routing with Delay and Bandwidth guarantees for mobile ad hoc networks." *Journal of Communications and Information Sciences (JCIS)* 2.1 (2012): 47-58.

Experiences

Work Experience

2014–2015 **Site and Telecommunication Engineer**, *Huawei Telecommunications*, Algiers, Algeria.

Missions—

- RF & PS swap and site Troubleshooting for 2G/3G networks
- Quality check on hardware equipment (Huawei and Alcatel Lucent).
- Site Acceptance and sites survey.
- BTS, Node B, MW, DBS RRU BBU installation and site integration using WEB LMT.

2013–2014 **Radio and Telecommunication Engineer**, *OTT Company of Djezzy*, Bordj Bou Arréridj, Algeria.

Missions—

- Ensure the installation of electrical, electronic, telecommunication sites.
- Perform the setting and the necessary tests to operate in accordance with specifications.
- Write a installation technical report and equipments installation & maintenance:
 - Troubleshooting of Alcatel Lucent hardware (TRE's, Combiners, etc.) through BTS NEM B11 software, BTS Commissioning and BTS Expansion.
 - Addition of TRE's (TRAGE, TRADE, TGT09, TGT18), ODU.
 - Replacement of faulty/low efficient TRE's & faulty combiners
 - Site audit & generating snag reports, PM for sites.
 - Microwave (NEC Pasolink and NEC Neo) installation, test, Troubleshooting.

2009–2013 **Freelancer**, *Developer of websites and desktop applications*, Bordj Bou Arréridj, Algeria.

Academic Services

2015–2018 **Teaching Assistance (TA)**, *School of Computing, NUS*, Singapore.

- *CG3002*– Embedded Systems Design Project.
- *CS3202*– Software Engineering Project.
- *CS1020*– Data Structure and Algorithms.
- *CS1010*– Programming Methodology.

2011–2014 **Teaching Assistance (TA)**, *Department of Computer Science, University of Bordj Bou Arréridj*, Algeria.

Module— Programming Languages.

2014–present **Reviewer**.

- IEEE TMM, IEEE Access, ACM TOMM, ACM MM 2017, IEEE Communications Magazine, MEDES 2014, IJPCC journal, KSII Transactions on Internet and Information Systems, Wireless Personal Communications Springer, EURASIP JWCN, etc.

Research Experience

- 2015–present **Enabling centralized and distributed optimizations of video delivery in HTTP adaptive streaming**—This project aims to propose a new video streaming solutions and architectures that can provide a high user satisfaction.
- 2013–2015 **QoS and Scalability in Mobile Networks**—This work focuses on developing a new network management scheme and algorithms that satisfy both network scalability and QoS for video streaming applications.
- 2011–2013 **Clustering Schemes in Mobile Networks**—This project aims to survey the existing work in network topology management.

Internship Experience

- Nov 2013 **Research Internship**, *IT Collage, UAE University, UAE.*
Advisor— Prof Saad Harous.
- Oct 2018 **Company Internship**, *Bitmovin, Inc., Austria.*
Advisor— Daniel Weinberger, Video Player Director.

Entrepreneurship Experience

- Oct 2018 - present **NUS Graduate Research Innovation Programme (GRIP)**, *NUS, Singapore.*
Project— MSDASH.

Presentations

- Aug 2018 **Thesis Proposal**, *NUS, Singapore.*
- Jul 2018 **IEEE International Conference on Multimedia and Expo**, *San Diego, USA.*
- Jun 2018 **ACM Multimedia Systems**, *Amsterdam, Netherlands.*
- Oct 2016 **ACM Multimedia**, *Amsterdam, Netherlands.*
- Apr 2016 **Qualifying Exam**, *NUS, Singapore.*
- Dec 2015 **Doctoral Symposium**, *Bordj Bou Arréridj, Algeria.*
- Dec 2014 **Doctoral Symposium**, *Bordj Bou Arréridj, Algeria.*
- Dec 2013 **Doctoral Symposium**, *Bordj Bou Arréridj, Algeria.*

Awards

- Jan 2015 **SINGA (Singapore International Graduate Award) Scholarship Recipient**, *NUS, School of Computing, Singapore.*
- Sep 2017 **Dean's Graduate Research Excellence and Research Achievement Awards**, *NUS, School of Computing, Singapore.*
- Jun 2018 **Best Student-paper Award**, *MMSys'18, Amsterdam, Netherlands.*
- Jun 2018 **DASH-IF Excellence in DASH Award (1st place)**, *MMSys'18, Amsterdam, Netherlands.*
- Jul 2018 **IEEE ICME 2018 Grand Challenges (1st place)**, *ICME'18, San Diego, USA.*
- Aug 2018 **Dean's Graduate Research Excellence Award AY2018/2019**, *NUS, School of Computing, Singapore.*
- Sep 2018 **The Global Young Scientists Summit (GYSS) 2019**, *NTU, Singapore.*

Skills

Languages Skills

Arabic Native
English Good
French Good

Communication Skills

- Participating and presentating in various academic conferences, talks and seminars.
- Ability to establish and maintain good working relations with people of different national and cultural backgrounds.
- Teaching some courses for the undergraduate student.

Organizational Skills

- Sense of organization and good experience in project or team management achieved through leading, managing and coordinating teams.
- Ability to write clear and concise reports.
- Self-controlled, Humanly oriented, trustworthy personality.
- Able to cope with stress.

Computer Skills

Networking TCP/IP, NAT, DHCP, DNS, Proxy, VPN, Firewall, Topologies, network cabling, Routing Protocol, Network Management, Wireless Network, AdHoc, WSN, OpenSSH, Apache2, OpenVPN, Bind9, Openssl, Iccast2, Rsync, Samba,Wifi.

Languages C, C++, C#, Java, SQL, XML, CSS, HTML, PHP, JavaScript, Matlab, Python.

Data Base SQLServer 2008 & 2005, MySql, Oracle11g.

OS Windows 7/8, Windows Server 2003/2008, and Linux (Ubuntu, redhat).

Write Editors Latex and Mircosot office.

Network Sim NS2/3, Opnet Modeler, TOSSIM, OMNET++.

Tools dash.js, Matlab, RYU SDN.

Formation and Training

CCNA Routing and Switching

Interests

Sport Football, Footing, Biking, Fishing.

Internet Personal Web Sites, Freelancer, Forum Moderators, Social Networks.

Research Research Methodologies, Writing and Presenting, Testing.

References

Associate Professor Roger Zimmermann, Department of Computer Science, School of Computing, National University of Singapore AS6, #05-05, 13 Computing Drive, Singapore 117417.

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Professor Saad Harous, College of Information Technology, UAE University, UAE.

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Assistant Professor Ali C. Begen, Networked Media Inc and Ozyegin University, Turkey.

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Associate Professor Wei Tsang Ooi, Department of Computer Science, School of Computing, National University of Singapore AS6, #05-14, 13 Computing Drive, Singapore 117417.

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Associate Professor Christian Timmerer, Department of Information Technology (ITEC), Multimedia Communication Group (MMC), Alpen-Adria-Universität Klagenfurt, 9020, Austria.

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