Resume

Yoones Hashemi Toroghi

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SUMMARY

- Solid background in communication theory, coding theory and digital signal processing.
- Over 6 years of professional experience in Research, Algorithm Design, Implementation and Analysis.
- Experienced in the area of Modern FEC codes for the next generation of communication systems.
- Proficient in programming with MATLAB and practical experience in programming with C++.
- Self-motivated, and capable of working independently as well as collaboratively as a team player.

WORK EXPERIENCE

Optical DSP Engineer, Huawei : August 2017 -

Optical DSP Algorithm Group, Ottawa, Canada
Research on 100G/400G/1T oDSP algorithms
Optimize FEC and Turbo Equalizer algorithms using Matlab simulation platform
Verify performance through offline testing

Graduate Research Assistant, Carleton University : January 2014 - August 2017

Professor Banihashemi's Research Group
Designed and implemented a novel approach for finding the problematic structures of LDPC codes.
Developed advanced error-correction codes for the next generation of optical, 5G and storage systems.
Published several papers in IEEE journals and conferences about Forward Error Correction(FEC) Codes.
Supervised graduate students.

Graduate Research Assistant, University of Tehran : 2011 - 2013

Signal Processing, Communication Systems Laboratory
Conducted research in the field of resource allocation for OFDMA-based Cooperative systems

Teacher Assistant, Carleton University : 2014-2017

Supervising students in laboratory experiments
Responsible for grading assignments, class participation, and exams
Helping students during office hours

Problem Solving and Computers :   Winter 2014
Systems and Simulation :   Fall 2014, Winter 2015, Winter 2016, Fall 2016
Communication Theory: Summer 2015, Summer 2016, Winter 2017

SELECTED COURSES

Error Control Coding	**Wireless Communications**	**Principles of Digital Communic.**
Digital Signal Processing	**Graphical Models**	**Wideband multiuser Communic.**
Advanced Communication systems	**Detection and Estimation**	**Adaptive Filters**

PUBLICATIONS

Peer-reviewed publications

Y. Hashemi and A. Banihashemi, "On characterization and efficient exhaustive search of elementary trapping sets of variable-regular LDPC codes," ***IEEE Comm. Lett.***, vol. 19, pp. 323–326, Mar. **2015**.

Y. Hashemi and A. H. Banihashemi, "Corrections to"on characterization of elementary trapping sets of variable-regular LDPC codes"," ***IEEE Trans. Inf. Theory***, vol. 61, no. 3, pp. 1508–1508, Mar. **2015**.

Y. Hashemi and A. H. Banihashemi, "New characterization and efficient exhaustive search algorithm for leafless elementary trapping sets of variable-regular LDPC codes," ***IEEE Trans. Inf. Theory***, vol. 62, no. 12, pp. 6713–6736, Dec. **2016**.

Y. Hashemi and A. H. Banihashemi, "Lower bounds on the size of smallest elementary and non-elementary trapping sets in variable-regular LDPC codes," to appear in ***IEEE Comm. Lett.***, June **2017**.

Y. Hashemi and A. H. Banihashemi, "Tight lower and upper bounds on the minimum distance of LDPC codes," to appear in ***IEEE Comm. Lett.***, Oct. **2017**.

Y. Hashemi, and A.Olfat, "An Efficient Resource Allocation Scheme for OFDMA-Based Cooperative Cognitive Radio Networks with Minimum Power Constraint," in *Proc. IEEE Sixth Int. Symp. on Telecomm. (IST)*, Tehran, Iran, Nov. **2012**, pp 176 - 181.

Y. Hashemi, and A.Olfat, "Joint Power and Subcarrier Allocation in OFDMA-Based Cooperative Cognitive Networks," in *Proc. IEEE Iranian Conf. on Elect. Eng. (ICEE)*, Mashhad, Iran, Apr. **2013**, pp 1-6.

Y. Hashemi and A. H. Banihashemi, "Efficient Exhaustive Search Algorithm for Elementary Trapping Sets of Irregular LDPC Codes," in *Proc. IEEE Int. Symp. Inform. Theory (ISIT)*, Barcelona, Spain, Jul. **2016**, pp. 2271–2275.

Y. Hashemi and A. H. Banihashemi, "An Efficient Exhaustive Search Algorithm for Elementary Trapping Sets of Variable-Regular LDPC Codes," in *Proc. Int. Conf. Commun. (ICC)*, Kuala lumpur, Malaysia, May **2016**, pp. 6261–6268.

Y. Hashemi and A. H. Banihashemi, "Characterization and efficient exhaustive search algorithm for elementary trapping sets of irregular LDPC codes," *IEEE Int. Symp. Inform. Theory (ISIT)*, Aachen, Germany. June **2017**.

Submissions under Review

Y. Hashemi and A. H. Banihashemi, "Efficient exhaustive search algorithm for elementary trapping sets of irregular LDPC codes," submitted to ***IEEE Trans. Inf. Theory***, Oct. **2016**, available online at:

http://arxiv.org/abs/1611.10014

Y. Hashemi and A. H. Banihashemi, "Characterization and Efficient Search of Non-Elementary Trapping Sets with Applications to Stopping Sets," submitted to ***IEEE Trans. Inf. Theory***, July **2017**.

HONOURS AND AWARDS

o   Selected to receive an IEEE ISIT 2017 Student Travel Grant, 2016
o   Selected to receive CMC Electronic Inc. Bursary, 2017
o   Selected to receive an IEEE ISIT 2016 Student Travel Grant, 2016
o   Selected to receive Gabriel Warshaw Scholarship, Carleton University, 2015
o   Selected to receive Carleton University SCE departmental Scholarship, 2014-2017
o   Selected to receive ITRC scholarship supporting M.Sc. thesis, 2011
o   Ranked 46 among 15,000 competitors in the National University Entrance Exam (M.Sc.'s Degree), 2010
o   Ranked 1079 among 350,000 competitors in the National University Entrance Exam (Bachelor's Degree), 2005
o   Selected as an Exceptional Talent by NODET (National Organization for Development of Exceptional Talents), 2001-2004

EDUCATIONAL BACKGROUND

Graduate Degree (Ph.D.) - 2017

Field:	Electrical Engineering-Communication Systems
School:	Department of Systems and Computer Engineering, Carleton University, Ottawa, Canada
GPA :	A^+
Thesis Title:	Characterization of problematic graphical structures of LDPC codes and the corresponding efficient search algorithms
Supervisor:	Dr. Amir Banihashemi (amir.banihashemi@sce.carleton.ca)

Graduate Degree (M.Sc.) - 2013

Field:	Electrical Engineering-Communication Systems
School:	Electrical and Computer Engineering, University of Tehran, Tehran, Iran
GPA :	16.4 (out of 20)
Thesis Title:	Performance Analysis and Resource allocation for OFDMA-based Cooperative CR
Supervisor:	Dr. Ali Olfat (aolfat@ut.ac.ir)

Undergraduate Degree (B.Sc.) - 2010

Field:	Electrical Engineering-Communication
School:	Ferdowsi University of Mashhad, Mashhad, Iran
GPA:	15.41 (out of 20)

COMPUTER SKILLS

Proficient in MATLAB, LaTeX and Microsoft Office.
Familiar with C++, Cygwin and HTML.

PERSONAL WEBPAGE

http://www.sce.carleton.ca/~yooneshashemitoroghi

REFERENCES

Dr. A. H. Banihashemi (Ph.D. Thesis Supervisor)

Department of Systems and Computer Engineering, Carleton university, Ottawa, Canada
Email: amir.banihashemi@sce.carleton.ca