ROBIN CHATAUT

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EDUCATION

2016 - Present
(Expected in May 2020)

Doctor of Philosophy, Computer Science and Engineering
Department of Computer Science and Engineering
University of North Texas, Denton, Texas
Advisor: Robert Akl, Ph.D.
Dissertation: Optimization of Massive MIMO System for 5G Networks

2010 - 2014

Bachelor of Engineering, Electronics, and Communication
Department of Electronics and Computer Engineering
Institute of Engineering, Pulchowk Campus
Tribhuvan University, Nepal
Advisor: Mr. Anil Verma, Associate Professor
Thesis: Vehicle Over Speed Detection and License Plate Recognition (Collaborated with Nepal Police)

RESEARCH AND TEACHING EXPERIENCE

2017 - Present

Teaching Assistant/Assistant Instructor
Department of Computer Science and Engineering, University of North Texas

- Supported many undergraduate and graduate level courses which include *Wireless Communication, Computer Networks, Computer Organization and Architecture, Cryptocurrencies, Foundation of Computer Science.*
- Conducted lectures, lab sessions, prepare lecture notes, exams, and quizzes.
- Advised undergraduate students on their research projects and senior design projects.

2016 – Present

Research Assistant
Wireless Sensor Lab, University of North Texas

- Design and implementation of precoding, detection, user scheduling, and channel estimation algorithms for Massive MIMO systems.

- Research on IoT and Smart Cities implementation issues.

2014 – 2015 **Teaching Assistant/ Co-Instructor**
Institute of Engineering, Tribhuvan University
- Conducted undergraduate level lectures, and lab sessions: *Introduction to C/C++ Programming, Digital Logic Design.*
- Supervised undergraduate research projects.

2010 – 2014 **Undergraduate Researcher**
Department of Electronics and Computer Engineering
Institute of Engineering, Tribhuvan University
- Research on Wireless Sensor Networks, RF and Microwaves

PROFESSIONAL EXPERIENCE

2015 **Internship, Nepal Telecom**
- Assisted technicians in equipment inspection, gathered and compiled data for projects as wells as prepare weekly status reports.

2015 – 2016 **Software Developer, Jhilko Innovations**
- Developed an interactive Android Application targeted to children with autism and their parents (Application Name: Beautiful Minds [Apk Link]). (Collaborated with UNICEF Nepal and Autism Care Nepal Society)

2012 – 2015 **Team Lead/ Co-Ordinator (Department of IT)**
- Held volunteer position at Nepal UNESCO Centre (Affiliated under UNESCO NEPAL)
- Responsibilities include teaching at schools in the rural part of Nepal, collection, and distribution of information to the Government of Nepal

2012 – 2013 **Editor**
- Editor of the first issue of "Graphene" and "EPC", tech magazines on latest technological advancement.

HONORS AND AWARDS

2020	**Outstanding Student** Nominated for Outstanding Grad Student of the year by College of Engineering, University of North Texas
2020	**Travel Grant** Awarded by CSE Department, University of North Texas
2019	**College of Engineering Department Award** Awarded by College of Engineering, University North Texas
2019	**TGS GSC Travel Grant** Awarded by Toulouse Graduate School, University of North Texas
2019	**TGS Summer Award** Awarded by Toulouse Graduate School, University of North Texas
2019	**Travel Grant** Awarded by CSE Department, University of North Texas
2019	**Texas Public Education Grant** Awarded by the State of Texas
2018	**TGS GSC Travel Grant** Awarded by Toulouse Graduate School, University of North Texas
2018–2020	**Multicultural Scholastic Award** Awarded by Office of Outreach, University of North Texas
2007	**Karnes Bryant Centennial Scholarship** Awarded by the APA Science Directorate.
2018	**Texas Public Education Grant** Awarded by the State of Texas
2016-2019	**Tuition Benefit Program Award** Awarded by University of North Texas
2010-2014	**Nepal Government Full Scholarship** Awarded by Government of Nepal, Institute of Engineering
2008-2010	**Mahatma Gandhi Scholarship for Academic Excellence** Awarded by Embassy of India in Nepal

PUBLICATIONS

PEER-REVIEWED RESEARCH

P.11 **R. Chataut**., R. Akl. "An Efficient and Fair Scheduling for Downlink 5G Massive MIMO Systems," Accepted at 11th IEEE Texas Symposium on Wireless and Microwave Circuits and Systems (TSWMCS 2020), Waco, Texas, USA.

P.10 **R. Chataut**., R. Akl. "Everything You Wanted to Know About Massive MIMO Systems for 5G Networks: Overview, Benefits, and Challenges," Submitted to Springer EURASIP Journal on Wireless Communications and Networking.

P.9 **R. Chataut**, R. Akl, M. Robaei " Accelerated and Preconditioned Refinement of Gauss-Seidel Method for Uplink Signal Detection in 5G Massive MIMO Systems,". 2020 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV.

P.8 **R. Chataut**, R. Akl, " Efficient and Low-Complexity Iterative Detection Algorithms for 5G Massive MIMO Systems". Submitted to IEEE Transactions on Vehicular Technology.

P.7 U.K. Dey, R. Akl, **R. Chataut** "High Throughput Vehicular Communication Using Spatial Multiplexing MIMO,". 2020 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV.

P.6 M. Robaei, R. Akl, and **R. Chataut**. ."Adaptive Channel Estimation-Tracking for Millimeter-Wave Massive MIMO", Submitted to 2020 IEEE 21th Wireless and Microwave Technology Conference (WAMICON), Cocoa Beach, FL, USA.

P.5 **R. Chataut**, R. Akl, "Channel Gain Based User Scheduling for 5G Massive MIMO Systems,". 2019 IEEE 16th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT and AI (HONET-ICT), Charlotte, NC.

P.4 **R. Chataut**, R. Akl and U. K. Dey, "Least Square Regressor Selection Based Detection for Uplink 5G Massive MIMO Systems," 2019 IEEE 20th Wireless and Microwave Technology Conference (WAMICON), Cocoa Beach, FL, USA, 2019, pp. 1-6.

P.3 **R. Chataut**, R. Akl, "Huber Fitting based ADMM Detection for Uplink 5G Massive MIMO Systems," manuscript accepted at 2018 9th IEEE Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON), New York, NY, 2018.

P.2 **R. Chataut**, R. Akl, "Efficient and Low Complex Uplink Detection for 5G Massive MIMO Systems," 2018 IEEE 19th Wireless and Microwave Technology Conference (WAMICON), Sand Key, FL, 2018, pp. 1-6.

P.1 **R. Chataut**, R. Akl, "Optimal Pilot Reuse Factor Based on User Environment in 5G Massive MIMO," 2018 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2018, pp. 845-851.

PRESENTATIONS

TALKS

Jan 2020 Accelerated and Preconditioned Refinement of Gauss-Seidel Method for Uplink Signal Detection in 5G Massive MIMO Systems. 2020 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA.

Jan 2020 High Throughput Vehicular Communication Using Spatial Multiplexing MIMO. 2020 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV

Oct 2019 Channel Gain Based User Scheduling for 5G Massive MIMO Systems. 2019 IEEE 16th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT and AI (HONET-ICT), University of North Carolina, Charlotte, North Carolina, USA.

Apr 2019 Least Square Regressor Selection Based Detection for Uplink 5G Massive MIMO Systems. The 20th Annual Wireless and Microwave Technology Conference (IEEE WAMICON 2019), Cocoa Beach, Florida, USA.

Nov 2018 HUBER fitting Based ADMM Detection for Uplink 5G Massive MIMO systems. The 9th Annual Ubiquitous Computing, Electronics & Mobile Communications Conference (IEEE UEMCON 2018), Colombia University, New York, USA.

Apr 2018 Efficient and Low Complex Uplink Detection for 5G Massive MIMO Systems. The 19th Annual Wireless and Microwave Technology Conference (IEEE WAMICON 2018), Clearwater Beach, Florida, USA.

Mar 2018 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2018), Arizona State University, Arizona, USA.

Jan 2018 Optimal Pilot Reuse Factor Based on User Environments in 5G Massive MIMO. Oral Presentation presented at the 8th Annual Computing and Communication Workshop Conference (IEEE CCWC 2018), University of Nevada, Las Vegas, USA.

Oct 2017 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2017), University of North Texas, Denton, Texas, USA.

Apr 2017 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2017), University of Texas at Dallas, Richardson, Texas, USA.

POSTERS

Feb 2020 5G Key Enabling Technologies and Applications. IEEE North Tech-SAS, Denton, Texas, USA.

Jan 2019 5G Key Enabling Technologies, Massive MIMO, and Millimeter Waves. Computer Science and Engineering Open House, University of North Texas

Apr 2018 Efficient and Low Complex Uplink Detection for 5G Massive MIMO Systems. The 19th Annual Wireless and Microwave Technology Conference (IEEE WAMICON 2018), Clearwater Beach, Florida, USA.

Mar 2018 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2018), Arizona State University, Arizona, USA.

Oct 2017 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2017), University of North Texas, Denton, Texas, USA.

Apr 2017 Optimization for Massive MIMO Systems. NCCS I/UCRC Industrial Advisory Board Meeting (IAB Meeting 2017), University of Texas at Dallas, Richardson, Texas, USA.

TEACHING INTERESTS

Computer Architecture, Computer Networks, Digital Logic Design, Future Generation Networks, Introduction to Object-Oriented Programming, Introduction to Programming, IoT and Smart Cities, Signals and Systems, VLSI Design, Wireless Communication, Wireless Networks and Protocols

RESEARCH INTERESTS

3G/4G/5G Networks, Wireless Communication, Massive MIMO, Millimeter Waves, Sensor Networks, IoT, Smart Cities, Vehicular Communication

TECHNICAL SKILLS

Programming Language and Mathematical Packages: C/C++, Java, Python, Matlab, R
Other: Simulink, Iotify, Verilog HDL, VHDL, Xilinx Foundation, ModelSim

PROFESSIONAL AFFILIATIONS AND SERVICES

Ad-hoc Reviewer

a) 2019 IEEE 16th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT and AI (HONET-ICT)
b) Journal of Electrical and Electronic Engineering, Science Publishing Group.

Professional Organization Member

a) IEEE
b) IEEE Young Professionals
c) Future Networks Community, IEEE
d) UNT IEEE Society
e) American Communication Association

REFERENCES

Robert Akl, Ph.D.
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Department of Computer Science and Engineering
University of North Texas, Denton, Texas, USA
(940)-565-2804, Robert.Akl@unt.edu

Kirill Morozov, Ph.D.
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