Azim Abdool *Eng, MIEEE, MAPETT*

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Experience

DECE, UWI   St. Augustine, Trinidad

Instructor - Computer Systems Engineering   *Aug '08 – Present*
See sections concerning Teaching, Research, Publications, University and Public Service

Student Assistant   *Sept '06 – Jul '08*
Demonstrated and assessed >10 laboratory exercises

Fasove Product Design and Development Co. Ltd.   Port of Spain, Trinidad

Director and Founding Member   *Jan '15 – Present*
- Managed 8 years of finances and produced end-of-year reports (generally consistent YoY growth)
- Led 5 product innovation teams for embedded projects (all on time and budget)
- Consulted as a development engineer on over 8 projects

Panadigm Innovations Ltd.   Macoyea Industrial Estate, Macoyea, Trinidad

Engineering Consultant - Product Re-engineering   *Aug '15 – Dec '19*
Design lead for re-engineering digital electronics for a MIDI-based musical instrument

University of York   Heslington, York, UK

Research Associate   *Jun '12 – Sept '12*
Visiting Researcher to the Computer Science Real Time Systems Group

Steelpan Initiatives Project   Engineering Institute, UWI, St. Augustine, Trinidad

Development Engineer   *Jun '07 – Aug '07; Jun '06 – Aug '06*

Education

University of the West Indies   St. Augustine, Trinidad

Doctor of Philosophy (Ph.D.) in Electrical and Computer Engineering   *Sept '17 – Present*
Submitted. Awaiting dissertation defense

Master of Philosophy (M.Phil.) in Electrical and Computer Engineering   *Sept '09 – Aug '17*
Awarded Upgrade to PhD

Bachelor of Science (B.Sc.) in Electrical and Computer Engineering   *Sept '04 – Jul '08*
With Honours

Teaching

DECE, UWI   St. Augustine, Trinidad

Instructor - Computer Systems Engineering   *Aug '08 – Present*
Academic advisor to ~20 students per year (6 years: 2019/20 - Present)

Project supervision:
- final year UG project (ECNG3020):
  - supervised ~3 students/year (9 years: 2015/16 - 2023/24)
  - 2nd examined ~3 students/year (9 years: 2015/16 - 2023/24))
  - mentor, moderator, 3rd examiner ~8 students/year (14 years: 2009/10-2023/24)
- engineering practice capstone community project (ECNG2005):

- – supervised ~1 group/10 students/year (15 years: 2009/10 – Present)
- – guest examiner ~4 years
- • supervised programming capstone project (ECNG2007) ~1 group/10 students/year (16 years: 2008/09 – Present)

Mentored student teams in competitions: Microsoft Imagine Cup, Teleios Code Jam, DCIT Runtime (15 years: 2008/09 – Present)

Curriculum Development:
- • Programme level:
  - – created CSEG programme renewal rollout plan post accreditation (2008)
  - – coordinating embedded systems renewal for proposed DECE flagship UG programme (2023-present)
- • Course level:
  - – managing the rollout of course development for 13+ new proposed courses including:
    - ∗ Electronics stream courses: Electronics 1, Electronics 2, Electronics 3, Electronics 4
    - ∗ Programming stream courses: Programming 1, Programming 2, Programming 3, Programming 4
    - ∗ Embedded Systems: Introduction to Microprocessor Systems, Microprocessor Systems Design and Interfacing, Real Time Microprocessor Systems, Embedded Product Development
    - ∗ Software Engineering and Management
  - – developed multiple new laboratory assessments:
    - ∗ 6 (2024/25) and 4 (2019/20) laboratory assessments for ECNG1009
    - ∗ 8 (2024/25) and 4 (2019/20) laboratory assessments for ECNG2007
    - ∗ 3 laboratory assessments for ECNG2005 (2021/22)
    - ∗ 3 laboratory assessments and project for ECNG3016 (2017/18)
    - ∗ 4 laboratory assessments and project for ECNG2004 (2015/16)
  - – contributed to the development of 4 new laboratory courses:
    - ∗ Foundations 1, Foundations 2, Integrated Systems Design 1, Integrated Systems Design 2
  - – revised several courses (>3) for "Table of Specifications" practices for matching LO to assessment

Teaching Portfolio Exists: Yes

Involved in >10 different courses in areas spanning:
Embedded and Microprocessor Systems:
- • ECNG2006 - roles held: course lecturer, course support team lead, demonstrator
- • ECNG2005 - project supervisor, course support team lead, guest examiner
- • ECNG3006 - roles held: course support team lead, instructor
- • ECNG3034 - roles held: instructor

Digital and Analog Electronics:
- • ECNG6601 - roles held: demonstrator
- • ECNG3016 - roles held: course lecturer, instructor
- • ECNG2004 - roles held: course lecturer, instructor, course support team lead
- • ECNG2012 - roles held: course support team lead
- • ECNG1014 - roles held: demonstrator
- • ECNG1012 - roles held: demonstrator, guest examiner

Software Engineering and Management; and Programming:
- • ECNG6613 - roles held: course lecturer, instructor
- • ECNG3023 - roles held: course lecturer, instructor
- • ECNG2007 - roles held: course lecturer, course support team lead
- • ECNG1009 - roles held: course lecturer, course support team lead
- • ECNG1006 - roles held: course support team lead, demonstrator, guest examiner

Avg student evaluation: 4.7   (*Likert scale – 1: Poor, 2: Fair, 3: Good, 4: Very Good, 5: Excellent*)

Scholarship of Teaching and Learning
- • 1 journal article, 5 conference papers, and 1 public compendium of course notes
- • 2 public YouTube channels on microprocessors and software engineering
- • attended and organised CPD workshops

Research and Innovation

DECE, UWI   St. Augustine, Trinidad

Instructor - Computer Systems Engineering   *Aug '08 – Present*
Google Scholar: cites: 70, h-index: 4, i10-index: 3

Current Research Projects:
- Reduction Trees applied to (I) MXUs to reduce the time complexity of matrix multiplications and (II) PE scaling for atomic operations in near-memory architectures
- PPA tradeoffs in PE word-lengths for near-memory applications
- SoTL: (I) Concept Inventories for Embedded Systems and (II) Hierarchical Student Management Practices in Software Engineering

Visiting Research Associate - University of York, Heslington, York, UK   *May '12 – Oct '12*
Analysed WCET performance of 3 memory archetypes

Ph.D. Graduate Student   *Sept '17 – Present*
Submitted dissertation, awaiting defense.

Fasove Product Design and Development Co. Ltd.   Port of Spain, Trinidad

FarmVue App   *Dec '20 – Dec '21*
Cross-platform mobile application with cloud-based backend for farm record keeping.

ProTool   *Dec '19 – May '20*
Led Requirements Engineering for the ProTool application development (IDB funded)

Robotic Christmas Train Display   *Oct '16 – Dec '16*
Mechanized train solution for the Long Circular mall as part of the Christmas display

Shadow Animation   *Sept '16 – Nov '16*
Projection system with shadow animation for Movietowne C3 display

Guitar Amplifier Project   *Mar '16 – May '16*
An electronic device that amplify backup music and voice when attached to an acoustic guitar

Boat Surveillence Project   *Feb '16 – Apr '16*
An IoT boat surveillance system for non-resident boat owners with boats moored in T&T

Low-cost Robotic kits   *Jan '16 – Dec '16*
Developed low-cost robotic kit prototypes for education

MobiAssist   *Jan '15 – Dec '15*
A wearable electronic device for aiding in the mobility of the vision impaired

ICD Project   *Jan '15 – Dec '15*
A low-cost clone of the Microchip ICD2

Y-Fumble   *Jan '15 – Dec '15*
Prototype electronics for a key locating system

Scholarly Activity

Reviewed 1 Journal Article for Caribbean Teaching Scholar (2014)
Registered EDAS Reviewer (since 2014)

Member of the Technical Program Committee (TPC) for:

- International Conference on Emerging Trends in Engineering and Technology (IConETech'2020, *St Augustine, Trinidad*)
- International Conference on Computer Vision and Image Analysis (ICCVIA'2015, *Sousse, Tunisia*)
- International Biometrics and Smart Government Summit (IBMSGS'2015, *Sousse, Tunisia*)
- IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (IEEE SPICES 2015, *Calicut, India*)
- International Conference on Computer Applications and Aided Diagnosis (ICCAAD'2014, *San Jose, California*)
- International Conference on Control Automation and Applied Mechanics (ICCAAM'2014, *Algeria*)

Publications

Journals

Q4

[1] Hanuman et al, *A Novel Approach To Detection and Evaluation of Resampled Tampered Images*, International Journal of Image Processing (IJIP), 9, 4, 222-240, 2015

[2] Radix, C. and A. Abdool, *Using Mind Maps for the Measurement and Improvement of Learning Quality*, Caribbean Teaching Scholar 3, 1, 3-21, 2013

Conferences

[1] Abdool, A., et al. *Evolving Software Engineering Education through Undergraduate Peer Mentorship*, Proceedings of the IEEE Frontiers in Education (IEEE FIE), 2025

[2] Persad, J., Rocke, S., Roopnarine, A. and Abdool, A, *Investigating the Impact of Substrate Composition on 3D Printed mmWave CSRR Sensor*, COMSOL Conference 2020 North America, 2020

[3] Abdool et al, *DataRPG: Improving student motivation in data science through gaming elements*, Proceedings of the IEEE Frontiers in Education (IEEE FIE), 2017

[4] Rocke, Sean, Abdool, A. and D. Ringis *Energy–Reduced Non–Contiguous Spectrum Sensing for Compliance Enforcement in Opportunistic Spectrum Access Environments*, Proceedings of IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM), 2015

[5] Persad, Jeevan, Rocke, S, Abdool, A, and D Ringis *Skin variations impact on non-invasive measurement of blood glucose with interdigital electrodes*, Proceedings of the 2015 COMSOL Conference, 2015

[6] Ringis, Daniel, Abdool, A. and Sean Rocke *The Effect of Pre-Processing of Media for a Mobile Augmented Reality System for Live Sporting Events*, Proceedings of the IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM), 2015

[7] Abdool, A., et al. *Teaching Undergraduate Computer Programming using Learning Styles and Motivation: A Multi-Level Approach*, Proceedings of the IEEE Frontiers in Education (IEEE FIE), 2015

[8] Abdool, A., Radix, C. and S. Rocke, *Exploration and Assessment of Memory Architectures for Densely Deployed Embedded Sensor Networks*, Proceedings of the ACM/IEEE Symposium on Rapid System Prototyping (ACM/IEEE RSP), 2014

[9] Abdool, A. and A. Pooransingh, *An Industry-Mentored Undergraduate Software Engineering Project*, Proceedings of the IEEE Frontiers in Education (IEEE FIE), 2014

[10] Pooransingh, A. and A. Abdool, *The Structure of an Industry-Mentored Group-Based Software Development Project*, ACTT 1st International Conference on Quality Assurance in Higher Education in Trinidad and Tobago "Quality in Higher Education: From Best Practice to Next Practice", 2013

[11] Sastry, M., Mallalieu, K. and A. Abdool, *Teaching Software Engineering as an Undergraduate Elective*, LACCEI Proceedings, Seventh LACCEI Latin American and Caribbean Conference for Engineering and Technology (LACCEI'2009), 2009

Other

[1] Mohammed, Feisal et al., *ECNG2006 Course Resources*, The University of the West Indies: UWISpace. St Augustine, Trinidad, 2008

Grants/Awards

- Hospitech: Supporting in-hospital COVID-19 Response through technology - UWI Research and Development Impact (RDI) Fund - TTD$650,000 (Sept 2020) (Team Lead: Craig Ramlal)
- Teaching and Research Equipment Grants from Xilinx, Inc. - total commercial value: ~USD$85,000
    - One (1) Zinq-7000 "Zedboard" SoC Development Board (2013)
    - Twenty-five (25) 3-year licenses for System Edition IDE (2012)
    - Five (5) Virtex-5 XUP FPGA Development Boards (2011)
    - Five (5) Spartan-6 Digilent Atlys Development Boards (2011)
    - Twenty-five (25) 3-year licenses for System Edition IDE (2011)
- Visiting Research Associate to the University of York - Research Travel Grant: TTD$70,000 (2012)
- National Further Additional Scholarship, GCE A-Level results (2004)
- Riemann Award, 2nd in the Trinidad and Tobago National Mathematics Olympiad (2002)

Presentations/Demonstrations

- Invited Plenary Speaker: *Clouds*, Microsoft Technology Symposium, Hilton, Trinidad, Sept 2019
- Presenter (Paper): *Exploration and Assessment of Memory Architectures for Densely Deployed Embedded Sensor Networks*, ACM/IEEE Symposium on Rapid System Prototyping, New Delhi, India, 2014
- Presenter (Paper): *An Industry-Mentored Undergraduate Software Engineering Project*, IEEE Frontiers in Education, Madrid, Spain, 2014
- Invited Speaker (Scholarly Public Lecture): *Using Mind Maps for the Measurement and Improvement of Learning Quality*, "Celebrating University Teaching Week", School of Education, The UWI, 2013
- Speaker (Scholarly Public Lecture): *The Structure of an Industry-Mentored Group-Based Software Development Project*, "ACTT 1st International Conference on Quality Assurance in Higher Education", NAPA, 2013
- Demonstrator for use of Green Technologies - ABB KNX (Zaref Engineering), "SanCity Green Expo", Skinner Park, San Fernando, 2013
- Presenter *Scalable Multiport Smart Memory*, "PG Seminar", The UWI, 2012
- Presenter *Scalable Multiport Smart Memory*, "Real Time Systems Group", University of York, UK, 2012
- Demonstrator for Robot Display, "CLL Open House", The UWI, 2011
- Co-Presenter *Current State of Student Clicker Projects in DECE*, "E-Learning Interest Research Group", DCIT, The UWI, 2010
- Presenter *Scalable Multiport Smart Memory*, "PG Seminar", The UWI, 2010
- Demonstrator for DigTutor Software, "E-Learn - World Conference on E-Learning by the Association for Advancement in Computing in Education (AACA)", Hyatt Regency, Port-of-Spain, 2009
- Presenter *Student Response System*, "Department of Electrical and Computer Engineering", The UWI, 2008

Professional Activity

- Founding member of Fasove, a design and prototyping startup (2015)
- Organizer Robotics Education Workshop for Teachers (2013)
- Member IEEE Committee on Ethics Education (2012)
- Organized Workshop in conjunction with UWI CETL for DECE Staff on "MyELearning Training", DECE, UWI (2012)
- Secretary IEEE Trinidad and Tobago Joint Computers and Communications Systems Chapter (2012)
- Assisted Organizing Education Robotics Conference (2011)
- Assisted with APETT Presidential Lecture Series (2011)
- Organized Workshop in conjunction with UWI CETL for CSEG Group on "Team Marking, MyELearning, Roles and Responsibilities and Peer Observation", CETL, UWI (2008)

University Service

Faculty Level:

- Committee Member, Deptl Rep: Faculty Conference (2019)
- Representative: Faculty of Engineering Postgraduate Open Day (2013)
- Committee Member: Faculty of Engineering Open Day (2011)

Departmental Level:

- Alt Chair: EDI Mainstreaming Committee (2024-Present)
- Level 1 Examination Coordinator (2021-2023)
- Working Committee (Leader): Departmental Space Planning Group (2013)
- Committee (Secretary): Computer Systems Engineering Group (2008-2015)
- Committee (Member): Computer Coordination Group (2010-2012)
- MSDN Academic Alliance Administrator (2010-2014)
- Departmental Moodle Liaison (2008-2014)
- Computer Systems Engineering Group Industry Outreach (2011)

Other:

- "World of Work" Mock Interviewer (2013-14)
- Technology Development for use within UWI e.g.
    - Low-cost clone of Microchip's ICD2 embedded debug tool (2015)
    - MyELearning (Moodle) platform plug-ins (management in large classes) (2010)
    - Hardware and Software based Student "Clickers" (2008)

Public Service

- Reviewer for the Trinidad and Tobago National ICT Plan (2012)
- Assisted Organizing Committee Teleios Code Jam - National Student Competition (2010-2011, 2015)
- Member of Trinidad and Tobago Microsoft Software Architect Council (2010)

Skills/Competencies

- Digital Systems Modelling, Design, Implementation and Test
- Embedded System Development
- Signal Processing for Image/Computer Graphics Applications
- Programming (multiple languages) and Database Systems
- Proficient in productivity tool use e.g. MS Office - MS Word, MS Excel, MS Powerpoint; OpenOffice/LibreOffice; LaTeXtypesetting
- Managing and working in teams

References

Prof. Brian Copeland
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