PERSONAL INFORMATION

Sajid Mohamed

Flux 4.078, Electronic Systems, Faculty of Electrical Engineering
Postbus 513, 5600 MB Eindhoven (The Netherlands)
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S.Mohamed@tue.nl

www.linkedin.com/in/sajidmohamed; https://github.com/sajid-mohamed

Skype sajid.m67

Sex Male | Date of birth 6 Jul 1990 | Nationality Indian | Status Married

Interests Football, Board Games, Fantasy Novels, Foodie, Travelling

CURRENT POSITION

Researcher, Eindhoven University of Technology

WORK EXPERIENCE

01 Jun 2016 – present

Early-Stage Researcher, Eindhoven University of Technology (NL)

Projects involved in: oCPS (http://ocps-itn.eu/) and FitOptiVis (https://fitoptivis.eu/)
- FitOptiVis (From the cloud to the edge – smart IntegraTion and OPtimisation Technologies for highly efficient Image and VIdeo processing Systems) funded by ECSEL JU.
- oCPS (Platform-aware Model-driven Optimization of Cyber-Physical Systems) ITN (Innovative Training Network) project funded by the European Union's Horizon 2020 Framework Programme.

08 April 2019 – 31 May 2019 (~2 months)

Secondment, Philips Healthcare (Best, NL)

Interventional X-Ray system, Image-Guided Therapy group.
Modelling, analysis and simulation of multi-source video streams transmission over ethernet.

27 Aug 2017 – 02 Sep 2017

Secondment, Ericsson HQ (Stockholm, Sweden)

Analyse the feasibility of platform-aware analysis of distributed image-capturing systems.

17 Jul 2017 – 11 Aug 2017 (1 month)

Secondment, Inchron GmbH (Potsdam, Germany)

Modelling and timing analysis for industrial applications, Integration of SDF3 with Inchron Tool Suite.

10 Jul 2014–30 Apr 2016 (2 years)

Research Assistant, Indian Institute of Technology (IIT) Kharagpur (India)

Sponsored Research and Industrial Consultancy (SRIC) Projects undertaken:

▪ AUTOSAFE (Architecture-Aware Timing Analysis and Optimization of Safety-Critical Automotive Software) – funded by IGSTC. Partners: Inchron GmbH, TU Munich, TRDDC Pune & IIT Kharagpur.

▪ Intelligent Tools for Smart Electrical Grids - funded by MHRD, Govt. of India

Emphasis on Formal Methods, Timing Analysis, Cyber-Physical Systems (Automotive, Smart Grid) .

15 Jun 2015–15 Jul 2015 (1 month)

Visiting Researcher, Institute for Real-Time Computer Systems, TU Munich (DE)

- Successfully implemented the AUTOSAFE tool flow.

2 Sep 2013–31 Mar 2014 (7 months)

Visiting Researcher, Institute for Real-Time Computer Systems, TU Munich (DE)

- German Academic Exchange Service (DAAD) IIT Masters' Sandwich Scholarship 2013/14.

- Research was done to complete the Masters' Thesis.

EDUCATION AND TRAINING

Jun 2016–Present

Doctoral Candidate, Eindhoven University of Technology (NL)

Expected thesis submission in July 2020.

Supervisors: Prof.dr.ir. Twan Basten and Dr. Dip Goswami

Thesis: Image-based control systems: Modelling, Design and Implementation.

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Jul 2012–May 2014 (2 years)

Master of Technology (M Tech) in Embedded Controls and Software, Indian Institute of Technology Kharagpur (India)

CGPA 8.87/10

Thesis title: Timed Abstractions and Analysis of Distributed Real-time Control Architectures
Supervisors: Prof. Partha P Chakrabarti (IIT Kharagpur) and Prof. Samarjit Chakraborty (TU Munich)

- Emphasis on Timing Analysis in Automotive Systems

Jul 2008–May 2012 (4 years)

Bachelor of Technology (B Tech) in Electrical and Electronics Engineering, National Institute of Technology Calicut (India)

CGPA 7.54/10

Major Project: Autonomous Self Navigating 4 Wheel Mobile Robot enhanced with Vision-Based Guidance & Tracking
Mini Project: Smart RFID based Debit Management System for Institute Messes

- Embedded Systems, Microprocessors and Microcontrollers, Robotics

Jul 2006–Mar 2008

Indian School Certificate (ISC)

93%

Council for the Indian School Certificate Examinations (India)

Mar 2006

Indian Certificate of Secondary Education (ICSE)

93.33%

Council for the Indian School Certificate Examinations (India)

PERSONAL SKILLS

Mother tongue: Malayalam

Other languages: English (C1), Tamil (B2), Hindi (B1), German (A1)

Organisational/managerial skills

- **Secretary**, BeNeLux chapter of Marie Curie Alumni Association (MCAA), 2018 - present
- **Communication and Events,** Career Development Working Group, MCAA, 2018.
- IEEE Region 8 (Europe, Middle East and Africa) **Management Activities Lead** (Student branches) of IEEE TEMS Young Professionals team 2018.
- **Organizing Committee**, 'Workshop on Design of High Assurance Automotive Control', in association with TU Munich, Inchron GmbH (DE), IIT Kharagpur & TRDDC Pune (IN), Dec 2015.
- **Organizing Committee**, 'Workshop on High Assurance Embedded Control Software', in association with Intel India & IIT Kharagpur, March 2014.
- **Organizing Committee**, 'Workshop on Embedded Controls and Software', in association with Intel India & IIT Kharagpur, May 2013.
- Excellent Leadership, Organisational and Managerial skills gained at NIT Calicut as:

  Academic Affairs Secretary (2011-12), General Student body of NIT Calicut; **Placements Co-ordinator** (2011-12); **Manager**, Program Committee, Tathva 2010 (Annual Techno-management festival); **Executive Committee** Member of Ragam 2012 (Annual Cultural festival); **Co-ordinator** of National Service Scheme; **Co-ordinator** of IEEE RoboNITics (the robotics group).

Job-related skills

Software Applications: **MathWorks (Simulink*, Stateflow*,** Embedded Coder, GPU Coder**), Inchron Tool Suite (chronVAL, chronSIM)*, TRACE*, MS Office***, dSpace, Synopsys (Design Vision, TetraMAX ATPG), IBM Rational (Rhapsody, Statemate), ModelSim, LabVIEW, **LaTeX***, pSpice

Verification and Validation tools: **SDF3*, UPPAAL (SMC, Cora)***, NuSMV, SPIN, MAST, Chronos, SpaceEx, Esterel

Integrated Development Suites: **Visual Studio*,** MPLAB, AVR Studio, Keil uVision, Xilinx ISE, **Eclipse SDK***, Netbeans IDE, Qt Creator, TensorRT

Programming languages: **C*, C++*, MATLAB***, **Python***, Java, Perl, Verilog, Esterel, Halide

Machine learning: MATLAB (Deep Learning Toolbox), PyTorch, TensorRT

Embedded Development Boards: NVIDIA (**AGX Xavier***, Drive PX2), Intel (Atom, Galileo), Xilinx (Spartan 3E, ZC702), Beagleboard-xM, FriendlyARM Mini2440A, Arduino Uno, PYNQ

Microcontrollers and Microprocessors: PIC (18F452, 18F4550), AVR (ATmega32L DIP, ATmega128 TQFP, ATmega328P), Intel Atom, ARM Cortex A8, Samsung S3C2440A

*** Expert**

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ADDITIONAL INFORMATION

Publications

Sajid Mohamed, Dip Goswami, Vishak Nathan, Raghu Rajappa, and Twan Basten, “A scenario- and platform-aware design flow for image-based control systems,” In MICPRO, 2020.

Sayandip De, Sajid Mohamed, Konstantinos Bimpisidis, Dip Goswami, Twan Basten, and Henk Corporaal, “Approximation trade offs in an image-based control system,” In DATE, 2020.

Sajid Mohamed, Asad Ullah Awan, Dip Goswami, and Twan Basten, “Designing image-based control systems considering workload variations,” In CDC, 2019.

Sajid Mohamed, Sayandip De, Konstantinos Bimpisidis, Vishak Nathan, Dip Goswami, Henk Corporaal, and Twan Basten, “IMACS: A framework for performance evaluation of image approximation in a closed-loop system,” In ECYPS, 2019. (**Best Paper Award**)

Dip Goswami, Sajid Mohamed, and Sayandip De, “Tradeoff analysis between Quality-of-Control and degree of approximate computing for image-based control systems,” In Proceedings of Summer School on Cyber-Physical Systems and Internet-of-Things, Vol. I, MECOnet, 2019.

Sajid Mohamed, Dip Goswami, and Twan Basten, “Bridging the controller design-implementation gap for image-based control systems,” In ICT.OPEN2019.

Sajid Mohamed, Diqing Zhu, Dip Goswami, and Twan Basten, “DASA: An open-source design, analysis and simulation framework for automotive image-based control systems,” In 6th MCAA Annual Conference, Vienna, Austria, 2019.

Sajid Mohamed, Diqing Zhu, Dip Goswami, and Twan Basten, “Optimising Quality-of-Control for Data-intensive Multiprocessor Image-Based Control Systems considering Workload Variations,” In Digital System Design (DSD), 2018.

Majid Zamani, Soumyajit Dey, Sajid Mohamed, Pallab Dasgupta, and Manuel Mazo Jr., "Scheduling of Controllers’ Update-Rates for Residual Bandwidth Utilization." In FORMATS, 2016.

Martin Becker, Sajid Mohamed, Karsten Albers, Partha Pratim Chakrabarti, Samarjit Chakraborty, Pallab Dasgupta, Soumyajit Dey, Ravindra Metta, "Timing Analysis of Safety-Critical Automotive Software: The AUTOSAFE Tool Flow." In APSEC, pp. 385-392, 2015.

Contributor, The Future of European Research Funding – Statement on the Framework Programme 9 by the Marie Curie Alumni Association, March 2018.

Honours and awards

- Marie Skłodowska-Curie ITN Scholarship (2016-2019)
  To pursue PhD at Eindhoven University of Technology
- Best Paper Award for ECYPS 2019 (2019)
- Best Poster Award Nomination for ICT.OPEN2019 (2019)
- Best Chapter Award for MCAA Benelux Chapter when I was its board member and secretary (2019)
- MHRD Scholarship to pursue Research at IIT Kharagpur (2014-2016)
- German Academic Exchange Service (DAAD) IIT Masters’ Sandwich Scholarship 2013/14
  To pursue Masters’ thesis in Technical University Munich
- MHRD Scholarship to pursue M Tech at IIT Kharagpur (2012-2014)
- AKS Scholar from ISTE, NITC students chapter for Abdul Kalam Scholarship Challenge (2008)
- Rashtrapathi Scout Award from the honourable President of India, Dr A P J Abdul Kalam (2006)
- Rajya Puraskar Scout Award from the honourable Governor of Kerala (2005)

Sponsored Projects

- FitOptiVis – funded by ECSEL Joint Undertaking

- oCPS (Platform-aware Model-driven Optimization of Cyber-Physical Systems) - funded by European Union Horizon 2020 framework programme for Research and Innovation

- Intelligent Tools for Smart Electrical Grids - funded by MHRD, Govt. of India

- AUTOSAFE (Architecture-Aware Timing Analysis and Optimization of Safety-Critical Automotive Software) – funded by Indo German Science and Technology Centre (IGSTC)

Awarded Travel Grants

- MCAA Micro General Assembly Grant to attend MCAA GA & Annual Conference, Zagreb (2020)
- MCAA Travel Grant to attend DATE conference, Grenoble (2020)
- MCAA Micro General Assembly Grant to attend MCAA GA & Annual Conference, Vienna (2019)
- MCAA Micro General Assembly Grant to attend MCAA GA & Annual Conference, Leuven (2018)
- MCAA Micro Travel Grant to attend PhD Day Groningen (2017)

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Reviewer

DATE, DSD, MECO, Journal of Microprocessors and Microsystems (MICPRO), IEEE Design and Test, International Journal of Control

Education (Teaching Assistant)

- 5LIJ0 Embedded Control Systems, Eindhoven University of Technology
  - awarded the **Excellent Course Evaluation 2018/19**
  - Semester B 2019/20; Semester B 2018/19; Semester B 2017/18; Semester B 2016/17
- 5XIC0 Systems Engineering, Eindhoven University of Technology
  - Semester A 2019/20; Semester A 2018/19
- 5AIA0/5EIA0 Computation I, Eindhoven University of Technology
  - Semester A 2017/18; Semester A 2016/17
- AT60003 Embedded Software Design and Validation (Theory), IIT Kharagpur
  - Autumn 2015; Autumn 2013
- AT69003 Software Design and Validation Laboratory, IIT Kharagpur
  - Autumn 2015; Autumn 2013

Supervision

Master students' supervision at TU/e – 3 completed, 6 ongoing (Total: **9**)

Bachelor students' supervision at TU/e – 4 completed

Memberships

IEEE- Institute of Electrical and Electronics Engineers

IEEE Technology and Engineering Management Society

IEEE Young Professionals

IEEE Control Systems Society (CSS)

Marie Curie Alumni Association (MCAA)

IEI - The Institution of Engineers (India)

REFERENCES

Prof.dr.ir. Twan Basten (PhD Promotor)

Professor, Electronic Systems Group,
Eindhoven University of Technology,
Dept of Electrical Engineering
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Eindhoven, The Netherlands.
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Website: http://www.es.ele.tue.nl/~tbasten/

Dr. Dip Goswami (Phd Daily Supervisor)

Assistant Professor, Electronic Systems Group,
Eindhoven University of Technology,
Dept of Electrical Engineering
PO Box 513, NL-5600 MB
Eindhoven, The Netherlands.
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E-mail: d.goswami@tue.nl
Website: https://www.tue.nl/en/research/researchers/dip-goswami/

Prof. Samarjit Chakraborty (M Tech Supervisor and Host – DAAD Scholarship)

William R. Kenan, Jr. Distinguished Professor,
University of North Carolina at Chapel Hill,
USA.
E-mail: samarjit@cs.unc.edu
Website: https://cs.unc.edu/people/samarjit-chakraborty/