

CURRICULUM VITAE

Rakshit Mittal

Date of Birth : February 23, 1999
Place of Birth : Navi Mumbai, Maharashtra, India
Gender : Male
Nationality: : Indian
Webpage : <https://raksooo9.github.io/>
Email : rakshitm@acm.org

Research Experience

- 2022 Tata Consultancy Services, Pune, India
Research Intern, Tata Research Development and Design Centre Project
- 2021, 2022 Département Informatique et Réseaux, Télécom Paris, Palaiseau, France
Research Intern, US Army CCDC-DevCom Atlantic Project
Architecture-Centric Model Management for Virtual-Integration Process
- 2020 Applied & Environmental Biotechnology Lab, BITS Pilani, Goa, India
Research Assistant, State Govt. of Jharkhand Project
GIS and InVEST Mapping of Wetlands for Economic Trade-off Study
- 2019-2022 Reconfigurable Computing Lab, BITS Pilani, Goa, India
Undergraduate Research Assistant, Faculty Project
Design and Implementation of Efficient EEG Detrending Algorithm
- 2019-2021 Application-Oriented Formal Methods Group, BITS Pilani, Goa, India
Undergraduate Research Assistant, Faculty Project
Translation Validation of Embedded Software using Petri Nets
- 2018-2019 pixxel inc., Bangalore, India
Research Intern, Satellite Antenna Design
Design and Implementation of S-Band, X-Band Microstrip Antennae

Education

- 2022-2025 Doctor of Philosophy, PH.D. (co-tutelle)
Subject : Computer Science
Supervisors : Hans Vangheluwe University of Antwerp, Belgium
Dominique Blouin Telecom Paris, France

2017-2022 Master of Science, M.Sc. (dual-degree program)
BITS Pilani, KK Birla Goa Campus, India
GPA : 7.87/10
Major : Mathematics
Thesis : Instance Model View-Update Problem in AADL (Télécom Paris, France)

2017-2022 Bachelor of Engineering, B.E.(HONS) (dual-degree program)
BITS Pilani, KK Birla Goa Campus, India
GPA : 7.87/10
Major : Electronics and Instrumentation
Thesis : Hardware Accelerated Neurodiagnostics (NTU Singapore)

Scholarships & Awards

2022 **Young Researcher**, Heidelberg Laureate Forum

2021 **Bronze Medal**, ACM Student Research Competition Grand Finals (200 USD)

2021 **Best Position Paper Award at ICSOFT'21** for
"Towards an Approach for Translation Validation of Thread-Level Parallelizing Transformations using Colored Petri Nets"

2021 **Charpak Lab Scholarship**, French Embassy in India, for internship at Télécom Paris (1,400 EUR)

2020 **Gold Medal**, ACM Student Research Competition, PLDI'20 (500 USD)

2020 **Felicitation Fund**, Council for Student Affairs, BITS Goa for publication of papers (5,000 INR)

2018-2021 **Merit-cum-Need Scholarship**, Student Welfare Department, BITS Goa for meritorious students with financial need covering part of semester tuition fee (~120,000 INR)

Journal Articles

TBA 1. Paritosh Varshney, Farzan Bharucha, [Rakshit Mittal](#), Yuvaraj Rajamanickam, Amalin Prince, Femi Robert. **Accurate and Efficient Seizure Detection and Sleep-Stage Classification using MoMaMeMi-filtered Electroencephalograms**. In Signal Processing. Elsevier.

TBA 2. [Rakshit Mittal](#), Yuvaraj Rajamanickam, AA Prince. **Review of Affective Computing for Learning in Educational Setting**. In Review of Educational Research. SAGE.

2022 3. [Rakshit Mittal](#), AA Prince, ARJ Fredo. **Time-Sliced Architecture for Efficient Accelerator to Detrend High-Definition Electroencephalograms**. In IEEE Transactions on Instrumentation & Measurement. IEEE.

- 2021 4. [Rakshit Mittal](#), AA Prince, Saif Nalband, Femi Robert, ARJ Fredo. **Modified-MaMeMi Filter Bank for Efficient Extraction of Brainwaves from Electroencephalograms**. In Biomedical Signal Processing & Control. Elsevier.
- 2021 5. [Rakshit Mittal](#), AA Prince, Saif Nalband, Femi Robert, ARJ Fredo. **Low-Power Hardware Accelerator for Detrending Measured Biopotential Data**. In IEEE Transactions on Instrumentation & Measurement. IEEE.

Conference Articles

Full Contributions

- 2022 1. [Rakshit Mittal](#), Dominique Blouin, Anish Bhoje, Soumyadip Bandyopadhyay. **Solving the Instance Model View Update Problem in AADL**. In Proceedings of 25th International Conference on Model-Driven Engineering Languages and Systems (MODELS'22). ACM.
- 2022 2. Vaibhav Jain, S Abirami, [Rakshit Mittal](#), Priya Rani, KR Anandh, ARJ Fredo. **Automated Diagnosis of Autism Spectrum Disorder Condition using Shape-based Features Extracted from Brainstem**. In Proceedings of the 32nd Medical Informatics European Conference. (MIE'22). IOS Press.

Tool Demonstrations

- 2022 1. [Rakshit Mittal](#), Dominique Blouin. **OSATE-DIM Solves the Instance Model View Update Problem in AADL**. In Companion Proceedings of 25th International Conference on Model-Driven Engineering Languages and Systems (MODELS'22). ACM.

Short Contributions

- 2021 1. [Rakshit Mittal](#), Dominique Blouin, Soumyadip Bandyopadhyay. **PNPEq: Verification of Scheduled Conditional Behavior in Embedded Software using Petri Nets**. In Proceedings of 28th Asia-Pacific Software Engineering Conference (APSEC'21). IEEE.
- 2021 2. [Rakshit Mittal](#), Rochishnu Banerjee, Dominique Blouin, Soumyadip Bandyopadhyay. **Towards an Approach for Translation Validation of Thread-Level Parallelizing Transformations using Colored Petri Nets**. In Proceedings of 16th International Conference on Software Technologies (ICSOFT'21). INSTICC.

Workshop Articles

Short Contributions

- 2020 1. [Rakshit Mittal](#), Rochishnu Banerjee, Santonu Sarkar, Soumyadip Bandyopadhyay. **Translation Validation of Loop involving Code Optimizing Transformations using Petri Net based Models of Programs**. In Proceedings of International Workshop on Petri Nets and Software Engineering, 2020 (PNSE'20). CEUR-Workshop Proceedings.

Book Chapters

- 2022 1. [Rakshit Mittal](#), AA Prince. **Catalogic Systematic Literature Review of Hardware-Accelerated Neurodiagnostic Systems**. In Biomedical Signal-based Computer-Aided Diagnosis of Neurological Disorders. Springer Nature.
- 2020 2. Bedir Tekinerdogan, [Rakshit Mittal](#), Rima Al-Ali, Mauro Iacono, Eva Navarro, Ken Vanherpen, Soumyadip Bandyopadhyay, Ankica Barisic, Kuldar Taveter. **A Feature-based Ontology for Cyber-Physical Systems**. In Multi-Paradigm Modelling Approaches for Cyber-Physical Systems. Academic Press.

Technical Reports

- 2021 1. Rima Al-Ali, Moussa Amrani, Soumyadip Bandyopadhyay, Ankica Barisic, Fernando Barros, Dominique Blouin, Ferhat Erata, Holger Giese, Mauro Iacono, Stefan Klikovits, [Rakshit Mittal](#), Eva Navarro, Patrizio Pelliccione, Kuldar Taveter, Bedir Tekinerdogan, Ken Vanherpen. **Framework to Relate / Combine Modeling Languages and Techniques**. For European Union ICT COST Action, 2021.
- 2020 2. [Rakshit Mittal](#), Lalitha Baragi, Srikanth Mutnuri. **Impact of Negative Factors and Importance of Monitoring Natural Wetland Ecosystems in Jharkhand: A Report on Biological Aspects**. For Forest Department, State Government of Jharkhand, India, 2020.

Poster Presentations

- 2022 1. [Rakshit Mittal](#). **Solving the Instance Model View-Update Problem in AADL**. At ACM Student Research Competition, International Conference on Model-Driven Engineering Languages and Systems (MoDELS'22), 2022.
- 2021 2. [Rakshit Mittal](#). **Translation Validation of Thread-Level Parallelizing Transformations using Color Petri Nets**. At ACM Student Research Competition Grand Finals, 2021.
- 2021 3. [Rakshit Mittal](#), Pritam Bhattacharya, Swaroop Joshi, Soumyadip Bandyopadhyay. **Virtual CSIS Education in India: Challenges and Opportunities**. At International Conference on Best Innovative Teaching Strategies (ICON-BITS'21), 2021.
- 2021 4. [Rakshit Mittal](#), Dominique Blouin, Soumyadip Bandyopadhyay. **Validating Extended Feature Model Configurations using Petri Nets**. At International Workshop on Petri Nets and Software Engineering (PNSE'21), 2021.
- 2021 5. [Rakshit Mittal](#), Soumyadip Bandyopadhyay. **Translation Validation of Scheduled Conditional Behavior using Petri Net based Program Models**. At International Workshop on Petri Nets and Software Engineering (PNSE'21), 2021.
- 2020 6. [Rakshit Mittal](#). **Translation Validation of Loop-involved Code Optimizing Transformations using Petri Net-based Program Models**. At ACM Student Research Competition, Programming Languages Design and Implementation Conference (PLDI'20), 2020.

Service

- Organizer* : Current Trends in Cyber-Physical Systems Workshop (CTiCPS'20)
Auxiliary Reviewer : ICSOFT'22, ISD'22, ICSOFT'21, ISD'21
Student Volunteer : PERR'22 (CAV'22), IWPE'22 (ISEC'22), SE4AI'21 (ISEC'21),
Region/Nation/Trans-Nation: Literature-Cinema Conference
Member : ACM Student Member (since 2020)
Experiment Volunteer : Cognitive Neuroscience Lab, BITS Goa

Teaching Experience

- FALL 2019 Teaching Assistant in "Mathematics I"
Department of Mathematics, BITS Pilani, Goa Campus, India
Lecturers : Tarkeshwar Singh, Mayank Goel

Software

- **OSATE-DIM**: Eclipse plugin tool for de-instantiating AADL models.
- **MoMaMeMi**: Modified-Maximum-Mean-Minimum filter, an approximate digital filter.
- **AMaMeMi**: Adaptive-Maximum-Mean-Minimum filter for detrending biopotentials.

Natural Languages

- Hindi* : Mother Tongue
2021 *English* : ToEFL iBT (Score:112/120)
2012 GESE, Trinity College, London (CEFR : B2)
Marathi : Intermediate Proficiency
French : Intermediate Proficiency

References

- Dr. A Amalin Prince, *Senior Member, IEEE*, Associate Professor, Dept. of EEE, BITS Goa.
Dr. Soumyadip Bandyopadhyay, Verification Engineer, NVIDIA Research.
Dr. Dominique Blouin, Research Engineer, Dépt. INFRES, Télécom Paris.
Further references on request