RAKSHIT MITTAL
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Formal Education

Pursuing **MSc. Mathematics & B.E.(Hons) Electronics and Instrumentation** (present)
   CGPA – 7.52/10 at the end of 6/10 semesters. (dual-degree program)
   Birla Institute of Technology and Science, Pilani, Goa Campus, India.
   Received Merit Scholarship [Year 2].

Graduated secondary school (CBSE) with **94.4% marks.** (2017)
   Subjects: Physics, Chemistry, Mathematics, English, Informatics Practices.
   B.K. Birla Centre for Education, Pune. (Co-Ed, Residential, IPSC)

Testing:
- SAT II {Math Level II}: **800/800** & {Physics}: **790/800** (03/12/16)
- SAT I: **1480/1600** [Math: 780/800, Reading and Writing: 700/800] (05/11/16)
- Graded Examination in Spoken English, Trinity College, London: **Grade B2.1, Level 7** (2013)

Professional Experience

- **Research Assistant**, Applied & Environmental Biotechnology Lab, BITS Goa. (08/20 – 12/20)
  - Govt. of Jharkhand project, "InVEST model and GIS map of wetlands".

- **Remote Research Intern**, Telecom ParisTech. (05/20 – 07/20)
  - Ontology of multi-paradigm modelling for cyber-physical systems.
  - **Member,** EU COST Action: IC1404 (MPM4CPS)

- **Research Intern**, pixxel, Bangalore. (04/19 – 04/20)
  - PS-1 Summer Project Title - 'Design S-band, X-band antennae for the (05/19 – 07/19)
    nano-satellites, in HFSS and implement the layout in ADS.'
  - Developed preliminary patents for different antenna configurations.
  - PoC satellite set to fly with micro-patch antenna designed by me.

- **Summer Intern**, Coherent Laser India Pvt. Ltd., Mumbai. (06/18 – 07/18)
  - Learnt basic theory of and operated CO_2, Nd:YAG, and fiber laser
    systems. Performed basic troubleshooting and assisted field engineers.

- **Academic Project Assistant**, Reconfigurable Computing Lab, BITS Goa.
  - {Design Project} 'Design & implementation of *Butterfly Architecture'* (Year 4|Sem 1)
  - {Lab Project} 'Development of algorithm of an EEG decomposer' (Year 3|Sem 2)
  - {Study Project} 'Implementation of MaMeMi filter on Xilinx FPGA.' (Year 3|Sem 1)

- **Academic Project Assistant**, Dept. of CSIS, BITS Goa.
  - {Study Project} 'Translation from AADL to PN for formal verification' (Year 4|Sem 1)

- **Teaching Assistant,** Mathematics I (Year 3|Sem 1)

Publications

Journals

- *R. Mittal, A.A. Prince, S. Nalband, F. Robert, A.R.J. Fredo,* "Low-Power Hardware Accelerator for Detrending Measured Biopotential Data", 2020, IEEE Transactions on Instrumentation & Measurement.
- *R. Mittal, A.A. Prince, S. Nalband, F. Robert, A.R.J Fredo,* "Modified-MaMeMi Filter for Efficient Extraction of Frequency-Dependent Artifacts from Electroencephalogram". (review, IEEE-TSP)
- *R. Mittal, P. Bhattacharya, S. Bandyopadhyay, S. Joshi,* "Virtual CSIS Education in India: Challenges and Opportunities". (review, CAIS)

Conferences

- {Gold Medal} *R. Mittal,* "SamaTulyataII: Validation of Code-Optimizing Transformations Involving Loops for Petri Net Based Models of Programs", Student Research Competition, PLDI-2020.
- *R. Mittal, R. Banerjee, S. Sarkar, S. Bandyopadhyay,* "Translation Validation of Code-Optimizing Transformations, Involving Loops, using Petri Net-based Program Models", Workshop PNSE-2020.

Book Chapters

- Co-author, Chapter 3: A Feature-Based Ontology for CPS in "Multi-Paradigm Modelling Approaches for Cyber-Physical Systems", Academic Press, Elsevier.

Skill Set

Software

- Technical: Xilinx Vivado HLS, MATLAB & Simulink, AnSYS Electromagnetics Suite, Cadence, Keysight ADS, CPN tools, Eclipse IDE, Protégé, ArcGIS, InVEST, pSpice, AutoCAD
- Other: Adobe Premiere Pro, Adobe Photoshop, Adobe Audition.
- Languages: Python, C, C++, Verilog, VHDL, MATLAB, LaTEX.

Hardware

Vector Network Analyzer (VNA) | Workshop: Manual and Power Tools

Relevant academic courses (grade obtained)

Communication Systems (A) | Control Systems (B) | Signals & Systems (A) | Digital Design (A)
EM Theory (A) | Computer Programming (B) | Analog Electronics (B) | Power Electronics (B)

Extra-curricular

- **Core Member**, Alumni Relations Cell, BITS Goa.
- **Member**, The Drama Club, BITS Goa.
  - **Writer and Director**, Best Original Script for 'Vishm Jwar' (Hindi)   Unmaad'19 – IIM Bangalore
    A full-length period drama revolving around the caste-system in India
  - **Director**, 1st Place, Streetplay (non-professional)   Baptizer'18 – Christ, Bangalore
- **Co-director and Editor**, music video for Baatein by Gravity   (2019)

references on request.