# AASTHA RASTOGI

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## EDUCATION

- **B.E in Computer Science Engineering – 7.63/10.0 (CGPA)**          **2019 – 2023**
  Birla Institute of Technology and Science - Pilani (BITS Pilani), Goa, India

## RESEARCH EXPERIENCE

**BITS Pilani, Undergraduate Thesis under Dr. Surjya Ghosh**          **Aug 2022 – Present**

- Title: Developing AI-enabled Framework for Opportunistic Emotion Self-Report Collection
- Objective: To develop framework that decides probing moments for emotion self-report collection instead of continuous sampling of emotion self-reports. We aim to achieve this by developing a state-of-the-art machine learning model based on the variation in physiological signals
- Deliverables: Codebase accompanying ML model for detecting opportune self-report collection moments, technical documentation

## WORK EXPERIENCE

**Amazon, Software Development Engineer Intern**          **May 2022 – Jul 2022**

- Developed script for Amazon Data Services that creates a customized dashboard showing code reviews raised to a team or group. It also mails the dashboard view to reviewers and managers
- Participated in a 2-day intra-organization hackathon. Collaborated in a diverse team of 5 to solve a pain-point and ameliorate employee experience

**Microsoft Engage Mentorship Program, Mentee**          **Jun 2021 – Jul 2021**

- Created a web application where two users can enter the same room to have an audio and video call
- Used front-end and back-end web technologies, web sockets and APIs - Link

**Dotlas, Data Engineer**          **Nov 2022 - Present**

- Working closely with the CTO to write scripts in Python, SQL to wrangle, analyze data
- Engineering, maintaining ETL pipelines and table creation and normalization

**Swecha Organisation, Machine Learning Intern**          **Jun 2021 – Jul 2021**

- Performed lane detection using center and two side lines as a part of autonomous cart for agriculture
- Used the OpenCV python library for computer vision for the detection of lines

**Elixar Systems, Intern**          **Apr 2020 – May 2020**

- Designed models and animations using Unity and Blender 3D modeling for CBSE's Chemistry Lab experiments for Classes XI & XII, based on the NCERT syllabus
- The models use Augmented Reality to build a virtual interface where students can perform experiments

## PROJECTS

**Title: Tic-Tac-Toe Android Application**          **Dec 2022**

- Developed single and multiplayer tic-tac-toe game application using JAVA and Firebase - Link

**Title: Tetris Game Engine**          **Mar 2022 – May 2022**

- Designed a programming language to make Tetris game and its variants that runs on terminal
- Implemented the compiler and grammar for the language - Link

**Title: Generating Audio from given Genre**          **Dec 2021**

- Created a variational autoencoder that generates an audio clip, given its genre
- Developed the model, trained, and tested using PyTorch and NumPy - Link

**Title: Impact of Skip Connections in Multilayer Perceptron**          **Sep 2021**

- Compared the performance of a Multilayer Perceptron with skip connections to those without it
- Used PyTorch to perform ablation studies and variational autoencoder as a generative model - Link

**Title: Game Development Using Unity**                                           **May 2020 – Jun 2020**
- Developed an indie game Pulse! for Developers' Society BITS-Goa Game Development website
- Worked on Unity Game Engine and C# Programming - Link

**Title: AR-based App Development**                                                             **Jul 2020**
- Participated in a 2-day hackathon to build project focused on mental health during COVID-19
- Created an AR-based app that guides the user through yoga postures - Link

## TEACHING EXPERIENCE

**Undergraduate Teaching Assistant at BITS Pilani – Goa, CSIS Dept.**
- Computer Networks (CS F303)                                              **Jan 2023 – Present**
  *Assisting in conducting labs and creating questions for labs based on socket programming & networking*
- Design & Analysis of Algorithms (CS F364)                               **Jan 2023 – Present**
  *Assisting in conducting labs and creating questions for labs based on Algorithms & Dynamic Programming*
- Compiler Construction (CS F363)                                          **Jan 2023 – Present**
  *Assisting in conducting labs and creating questions for labs based on Flex, Bison, LLVM & Compiler Design*
- Object Oriented Programming (CS F213)                                    **Aug 2022 – Dec 2022**
  *Assisted in conducting labs and creating questions for labs based on JAVA and Object-Oriented Programming designed for second-year students*
- Computer Programming (CS F111)       **Mar 2022 – Jul 2022, Mar 2021 – Jun 2021**
  *Assisted in conducting labs and creating questions for labs based on BASH and C programming*

## POSITIONS OF RESPONSIBILITY
- Vice-Captain, Girls' Basketball Team, BITS-Pilani, Goa            **Aug 2021 – Aug 2022**
- Vice Chair, ACM BITS-Pilani Goa Chapter                          **Apr 2021 – Apr 2022**
- Core Member, Developers' Society, BITS-Pilani, Goa               **Jan 2020 – Jun 2021**
- Secretary of Inter-School Competitions, Delhi Public School, Faridabad       **2017 – 2018**

## VOLUNTEER EXPERIENCE
- vGHC' 21 Open Source Day Mentor                                  **Jul 2021 – Oct 2021**
- Chapter Lead, GirlScript Foundation                             **May 2021 – Nov 2021**
- Mentor, BITS Goa Women in Tech                                  **Feb 2022 – Present**
- Mentor, Peer Mentorship Program, BITS-Pilani, Goa               **Nov 2020 – Jun 2021**
- Mentor, Game Development Summer Technical Projects at BITS Goa   **Jul 2021 – Sep 2021**
- VMware Campus Ambassador                                        **Oct 2021 – Apr 2022**
- Alpha Microsoft Learn Student Ambassador                        **May 2021 – May 2022**

## ACHIEVEMENTS
- Received 100% fee waiver scholarship at DPS, Faridabad                     **2017 – 2018**
- Excellence for Teaching Assistantship for Computer Programming at BITS Pilani   **2021 – 2022**
- Earned State 1st Rank in NSTSE Examination                                         **2012**
- Scholar Badge and Proficiency Awardee at DPS, Faridabad                    **2011 – 2019**

## CO-CURRICULAR ACTIVITIES
- Cleared preliminary-Regional Mathematics Olympiad                                  **2017**
- Certificate of distinction in Australian National Chemistry Quiz                   **2016**
- Contributor, GirlScript Winter of Contributing                   **Sep 2021 – Dec 2021**

## SKILLS
- **Programming Languages:** C, C++, C#, JAVA, Python
- **Web Technologies:** HTML, CSS, JavaScript, PHP, React.js
- **Libraries:** NumPy, Pandas, PyTorch, Keras, Scikit Learn, OpenCV, TensorFlow
- **Tools:** Unity Game Engine, Blender, Android Studio, MySQL, Firebase, Git
- **Certifications:** Build Basic GANs, Basic Problem Solving, Fundamentals of Deep Learning, Network Management & Ethical Hacking, Game Development, Augmented Reality Development