PRATYAY BANERJEE

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🎓 EDUCATION

Academy of Technology   2018 - 2022
B.Tech — Electronics & Communication Engineering   *CGPA: 8.89*
Coursework: Data Structures & Algorithms, Computer Networks, Digital Circuits, Database systems,
Differential Equations, Linear Algebra, Electronic Devices, Digital Signal Processing, Operating Systems

💼 EXPERIENCE

Applied Research Intern   Aug 2023 – Present, (Remote)
Syracuse University
- Working on Real-Time Efficient End-to-End Multi-Person Pose Estimation from Low-Res Video Feed at SVS Lab.

Google Summer of Code 2023   May 2023 – Aug 2023, (Remote)
TensorFlow — » (Final Report)
- Developed a touchless gesture-based holistic hand-tracking module & pioneered an interactive GDPR-compliant web demo leveraging MediaPipe Solutions for seamless contactless gesture-based transactions.
- Enhanced performance via GPU delegate & implemented custom gesture detection logic, reducing dependency on GestureRecognizer Task.
- Improved startup time by 275% through precaching & provided offline functionality, facilitating a much smoother UX.

HackIllinois Open Source Fellow   Sept 2021 – Oct 2021, (Remote)
University of Illinois at Urbana-Champaign
- Worked on async wrappers of ***k8s.io/apiserver*** under Cloud Native Computing Foundation (CNCF).
- Refactored rate-limiter logic and reduced unnecessary requests to generate nonce.

MITACS Globalink Research Intern   Jun 2021 – Aug 2021, (Remote)
University of Alberta, CA
- Collaborated with *Dr. Nilanjan Ray* to design and develop a *mobile head-motion tracking unit* based on *Realtime Computer Vision* (RCV), aimed at providing a reliable & portable solution for GUI based touchless cursor control for the specially-abled.
- Implemented optimized on-device computation to reduce latency, hence improving overall system efficiency, while ensuring security, accuracy & adaptability in various environments, including low-light conditions.

Summer Research Intern   Mar 2021 – May 2021, (Remote)
International Institute of Information Technology, Hyderabad
- Was a part of the Applied Machine Learning & Data Science program in partnership with IIT Kanpur's IDEA Laboratory.

Software Development Engineer Intern   Jul 2020 – Jan 2021, (Remote)
Layer5, Inc
- Migrated SMP to Rails & refactored UI to remove unnecessary dependencies, *improving site health & SEO* by 63%
- Improvised unit tests using Cypress to streamline workflows *reducing overall processing time* by 30%

Summer Intern   Apr 2020 – Jul 2020, (Remote)
Indian Institute of Technology, Kanpur
- Was a part of the Applied Machine Learning & Data Science program in partnership with IIT Kanpur's IDEA Laboratory.

Web Development Intern   May 2020 – Jul 2020, (Remote)
Helto
- Crafted modular components and helped reduce unnecessary network calls, improving page speed & overall SEO.
- Collaborated with team for architectural decisions, wrote efficient, maintainable & reusable code prioritizing privacy and security.

Software Engineer Intern   Apr'2020 – Jun'2020, (Remote)
Spotle.ai
- Worked on the *authentication layer* & tailored a server side rapid-checkout module in the payment gateway leveraging Keycloak.
- Wrote custom serverless functions for Cloudflare Workers for auto lazy-indexing *thousands of contents*, *reducing egress costs* by 45%

📂 PROJECTS

HealthifAI ⎋ » ◯   ⚙< Python, Vite.js, Flask, Pytorch, Firebase, Linode ›

- Crafted a quick Naïve Bayes disease classifier API (using Flask), with precaution recommendations & also integrated OpenAI's Whisper into the pipeline to expand audience interactivity. Additionally, incorporated Photoplethysmography for heart rate monitoring.
- Got accepted into the CREATE-X Launch program in partnership with Elevance Health, and also **won** the Best Healthcare Hack award among 300 participants at **Hacklytics 2023**, hosted by Georgia Tech. Additionally, became Runner-Up in Linode Hackathon 2023.

ZenTube ⎋ » ◯   ⚙< React.js, Tailwind, Node.js, Flask, Tensorflow.js, GCP, Nginx ›

- A Web App that revolutionizes YouTube learning by generating summaries of time-stamped key points of transcripts & visualizations.
- Built middleware to convert m4a to mp3 & generate summary from mp3 to text via Huggingface API & fed into a BERT QnA pipeline.
- Achieved **Best Overall** in the advanced category at **MetroHacks 2021** among 190 participants, hosted by *Tsinghua University*.

Adoptic ⎋ » ◯   ⚙< JavaScript, PDF2Image, Sharp, ML5.js, P5.js ›

- Leveraged P5.js & Tensorflow's on-device FaceAPI to detect + track facial landmarks for gesture-based navigation along with ML5.js's Posenet API to automatically scale content on the GUI based on users' proximity to the screen.
- Designed the UI of the PDF-reader with PDF2Image wrapper (using sharp) module & integrated support for custom imports via URL.
- Received *Health and Wellness* track prize along with *Best AI* project by Nittany AI at Penn State's annual hackathon **HackPSU 2021**.

🏆 ACHIEVEMENTS

- ◇ Earned **Dan Kohn Scholarship** to visit KubeCon + CloudNativeCon Europe 2023 hosted by the Linux Foundation in Amsterdam.
- ◇ **Won** the *Grand Prize* at **HackTech 2023**, Caltech's annual hackathon & got featured in their official blog!
- ◇ **Winner** of two track prizes including the *Best Overall* prize at Tsinghua's annual hackathon **Metrohacks 2022**.
- ◇ **Winner** of three track prizes including the *Second Place Overall* prize at UofGuelph's annual hackathon **GryphHacks 2022**.
- ◇ **Awarded** the *Third place Overall* among 503 participants at **Faber Web3 Hackathon**, sponsored by Protocol Labs.
- ◇ **Awarded** the *First place Overall* among 588 participants at **HackNYU 2022**, hosted annually by New York University.
- ◇ Selected as **one of the top six** undergraduates for Research Week with Google 2022, among **3500** plus applications across India!
- ◇ **Scored a ticket** for the prestigious **AstroHackWeek 2022 Summer School**, hosted by **Max Planck Institute**, Germany (Virtual).
- ◇ **Earned** the HackIllinois Open Source Fellowship 2021 from the University of Illinois UC, among 24 individuals selected globally.
- ◇ **Selected** for **AI+Science Summer School**, jointly hosted by the Data Science Institute (DSI) and IMSI.
- ◇ **Winner** of four track prizes including the @ *Company Grand Prize* at UC Berkeley's annual hackathon **CalHacks 2021**.
- ◇ **Won** both *Second Place Overall* & *IThinkUPC Challenge Prize* at **HackUPC 2021**, BarcelonaTech's annual hackathon.
- ◇ **Selected** for **CIFAR** *Deep Learning Reinforcement Learning Summer School*, 2021
- ◇ **Received** *First place Overall* among 365 participants at Canada's largest hackathon - **uOttaHack4 2021**, hosted by UofOttawa.
- ◇ **Overall Winner** of Georgetown University's annual hackathon **Hoya Hacks 2021**.
- ◇ Regional **Top 10** in Build for Digital India (BFDI), 2020, hosted by MeitY and Google **among 51/4756 teams** across India!
- ◇ Max Rated **4 stars** on **CodeChef** & secured a Global Rank of **619** on Google Hash Code 2020.
- ◇ Secured the national ranking of **8** at the **SAP Semicolon Hackathon 2019**.
- ◇ **One of the 50** individuals, selected globally for Google India Scholarship & Secure and Private AI Scholarship by Facebook, Inc.
- ◇ Received Swami Vivekananda **Merit Scholarship** for academic excellence, funded by Govt. of West Bengal.

🧩 CO-CURRICULAR

- ◇ Significantly contributed to 10+ actively popular OpenSource projects like Apache, Cilium, Facebook, TensorFlow, GRPC, & more.
- ◇ Mentored over 1500 hackers globally at prestigious international hackathons like HacktheNorth, SBUHacks, UofTHacks, etc.
- ◇ Led the Google Developer Students club, Academy of Technology as core committee member & Web Dev lead in AY 2020-21.
- ◇ Mentored over 25 fellows from various countries contributing to TensorFlow org in Google Code-in 2019.
- ◇ Led the Innovation & Development Cell, Dept. of ECE, Academy of Technology, as Student Representative in AY 2019-20.

</> SKILLS

- ◯ **Technical:** Python, C++, C, JavaScript, Go, Bash, SQL
- ◯ **Frameworks & Libraries:** React.js, NodeJS, Flask, Pytorch, Tensorflow, D3, Numpy, Pandas, Docker, Firebase, MongoDB
- ◯ **Other Tools:** Git, GitHub, Tailwind, Prisma, GCP, AWS, Postman, VSCode, Miro, CircleCI
- ◯ **Non-Technical:** Figma, Canva, Adobe Photoshop, Adobe Premiere Pro, MS Office