

PARTH AJMERA

ajmeraparth132@gmail.com | +91-8460141275 | [Linkedin](#)

EDUCATION AND SCHOLASTIC ACHIEVEMENTS

B.Tech, Computer Science and Engineering, Indian Institute of Technology Madras , CGPA 8.74	2023
Class XII, Science Stream , Ahmedabad Public School, Gandhinagar, Percentage 93.4%	2019
Recipient of KVPY Fellowship (All India Rank 382) by Dept of Science and Technology, Govt. of India	2019
Secured All India Rank 159 in JEE Advanced amongst around 150,000 shortlisted candidates	2019
Secured All India Rank 121 (Percentile – 99.9938) amongst 1.5 million candidates in JEE Mains	2019

PROFESSIONAL EXPERIENCE

Technical Team Lead, Infurnia Technologies	July '23-Present
<ul style="list-style-type: none">Engineered WebGL and Vulkan supported ray tracing renderer using Bounding Volume Hierarchy tree and reduced peak memory by 70%Drafted and executed comprehensive lower-level graphics library for 2D (~250fps) and 3D (~80fps) viewports of BIM softwareDeveloped 3D design real time Virtual Reality tours and working on generative AI based engines for render tuningEmployed various optimization techniques that slashed rendering time by 20%	
Software Developer Intern, Microsoft India	May-July '22
<ul style="list-style-type: none">Established Rule Based Engine to determine Apache Spark's cores, executors, memory and overhead related parameters for Big Data Transformation & ML jobs, on over 100TBs data and estimated execution time of the underlying actionUsed HDInsight Cluster for data generation and Azure Pipeline on Azure Data Factory for automating the spark resources allocation	
Robotics Software Developer, Jetbrain Robotics	Dec-Jan '22
<ul style="list-style-type: none">Performed Obstacle Detection and Depth Map Generation with StereoVu camera and Jetson Xavier on ROS in ~10ms/frameClassified obstacles as static/dynamic and traced their trajectories to estimate in-future position generating a Real Time Occupancy Map	
Data Science Intern, Tathya.Earth	Jun-July '21
<ul style="list-style-type: none">Produced 3D models via processing satellite captured images to estimate iron ore and coal concentration on geo sitemap in real timeMasked and Tiled stockpiles of the base site using TIFF files and extracted the relevant metadata of each site and ores	

PROJECTS

ChainCred : Financial B2B Due Diligence Platform	May '24-Present
<ul style="list-style-type: none">Launched secured data exchange platform for finance management via Soroban smart contracts, supported by 30k USD grantBuilt end to end finance ERP on blockchain to keep data robust and offered selective data visibility through permission-based access	
CNN vs CapsNet and their Adversarial Attacks	Jan-May '23
<ul style="list-style-type: none">Implemented CapsNet achieving ~5% higher accuracy over traditional CNNs and reducing training loss from 0.64 to 0.08 on CIFAR-10Layered CapsNet into Convolutional, 32 channel Primary Capsule and Digit Capsule layers outputting 16-D vector with Margin LossPerformed and Quantified fooling rates of adversarial attacks like Carlini Wagner, Deep Fool and Boundary attack and self orchestrated an imperceptible attack method on CapsNet to identify potential vulnerabilitiesAdditionally explored defensive strategies such as capsule masking and defensive distillation	
Malware Detection: Analyzing Threats via Semantics	Apr-May '22
<ul style="list-style-type: none">Executed system-call based semantic analysis and traced critical system calls memory mapping to detect malwares using GuardOL modelDesigned frequency centralized model for feature construction and multi level perceptron for classification and analyzed their efficiencies	
Macro Java Compiler	July-Nov '21
<ul style="list-style-type: none">Constructed 6 staged MacroJava to MIPS assembly compiler leveraging Flex and Bison for Lexical Analysis and JavaCC, JTB for restGenerated Type Checking, MicroIR generation, Mini Register Allocation and MIPS Assembly Code intermediate stages	
Pipelined Processor and Cache Simulator	Mar-May '21
<ul style="list-style-type: none">Devised 5 staged Scalar Pipelined Processor with Operand Forwarding enabled reducing cycles clocked by over 35%Implemented Instruction Fetch, Decode, Execution, Memory and Write Back stages supporting 16-bit ALU instructions, load, stores, jumps and halts with stalls, time and CPI statistics. Also implemented direct and associative cache with LRU and pseudo LRU block replacements	

SKILLS & COURSEWORK

Languages:- C, C++, Python, Java, JavaScript, Scala, OCaml, SQL, x86 Assembly, GLSL

Libraries / Framework:- OpenGL, Vulkan, Spark, OpenCV, ROS, CNN, Numpy, Matplot, Pandas, Web3.js, Stellar SDK

Important Coursework:- Database Systems, Machine Learning, Artificial Intelligence, Data Structures and Algorithms, Operating Systems, Computer Architecture, Cryptography, NonLinear Optimisation, Secure Systems, Compiler Design, Probability and Statistics

CO-CURRICULAR ACTIVITIES

[Competitive Coding] Problem Setter for 2 coding contests, CP Potpourri and ESolang Contest, with 500+ participant teams. 5* on Codechef

[Puzzle and Mathematics] Selected for finals of LogicX, Shaastra '21 and Reverse Coding, Shaastra '20 and Shaastra '21

[Sports] Gujarat U-14 State level cricket player. Represented school and hostel at basketball and theater competitions as well