

# DIP VIJAYKUMAR

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## PROFESSIONAL SUMMARY

- Waterloo ECE Master's student, **Excellence Awardee**, and former **ISRO Research Intern**.
- Working on an **industry-sponsored project with Cistel**, developing AI-driven fault detection for mechanical systems.
- Builds side projects to explore Web Development, Cloud, DevOps, and engages in **competitive coding**.

## TECHNICAL SKILLS

**Languages** : C, C++, Java, Android (Java), Python, SQL (Postgres, MySQL, SQLite), JavaScript, TypeScript, HTML, CSS  
**Frameworks** : Bootstrap, TailwindCSS, React, Angular, Express.js, Node.js, Flask, J2EE (Servlet, JSP), ORM (Hibernate, Prisma), SpringMVC, SpringBoot, Java Swing, Tkinter  
**Cloud & DevOps** : GIT, Docker, Kubernetes, Google Cloud Platform(GCP), AWS (SNS, SQS, Lambda, RDS, EC2, S3)  
**Networking / API** : TCP, UDP, WebSocket, WebRTC, HTTP, HTTPS — Postman API, JMeter

## EXPERIENCE

**Cistel** | *Git, Bash, Python, Pytorch*

Jan 2025 – Present

*Project Intern*

Ontario, Canada

- Collaborated with a cross-functional team to **develop an AI-powered diagnostic system** for mechanical equipment to reduce downtime and maintenance costs.
- Conducted **weekly discussions** to refine process and resolve issues.
- Prepared a Kaggle repo for the Paderborn dataset, **reducing acquisition time by 80%** per model training.
- Built a robust data pre-processing pipeline, model training, and hyperparameter tuning, **speeding up the process by 2x, reducing manual work by & error rate by 1/2.**

**Indian Space Research Organization** | *Git, Bash, ArcGIS, Python, Java, Pytorch, Tensorflow*

Jan 2023 – May 2023

*Research Intern*

Ahmedabad, Gujarat, India

- Trained **Conv-LSTM (97.33%)** and **ResNet-34 (96%)** on dataset, selecting Conv-LSTM for final predictions.
- Automated SAR image denoising with SNAP's GPT, **reducing processing time from 25 to 5 minutes (4x speed-up)**.
- Designed a shell script for batch downloading 6 SAR images from ASF-VERTEX, **eliminating manual effort by 100%**.
- Gained experience in backend automation, API integration, and cloud-based data processing for web apps.

## PROJECTS

**CamOptix** | *Linux, Git, Multi-programming, Multi-processing, Inter-process Communication, C++, Python*

Sept 2024

- Led a team of two to develop an optimized street camera placement system, **improving runtime by 5%**.
- Developed test scripts to catch and prevent **5+ critical issues** pre-deployment.
- Optimized camera placement using CNF and a SAT solver, drastically reducing manual effort by far margin. [\[Git\]](#)

**Chess Game Application** | *HTML, CSS, JavaScript, TypeScript, Angular*

July 2024

- Designed and developed a **chess game web application** using modern web technologies.
- Created **unit tests** that streamlined the debugging process, **reducing issue resolution time by 50%** in early stages and greatly enhancing game logic efficiency.
- Implemented complex chess mechanics (pawn promotion, castling, check detection, legal move validation, en passant) with **100% rule accuracy**. [\[Git\]](#)

## EDUCATION

**University Of Waterloo** | CGPA(9.08 / 10.00)

May 2024 – May 2025

*MEng. Electrical and Computer Engineering (ECE)*

Waterloo, Ontario, Canada

**Birla Vishvakarma Mahavidyalaya (BVM)** | GPA(9.19 / 10.00)

May. 2019 – May 2023

*B.Tech in Computer Engineering*

Anand, Gujarat, India

## ACHIEVEMENTS

**ECE Master of Engineering Award of Excellence** | University of Waterloo

Jan 2025

*Awarded for outstanding academic performance in the MEng. ECE program.*

Waterloo, Ontario, Canada

**Academic Excellence Award** | Birla Vishvakarma Mahavidyalaya (BVM)

May 2023

*Recognized for academic excellence and ranking in the top 5 of the Computer Engineering program*

Anand, Gujarat, India