Sandeep N Kundalwal ⊕

M.Tech: Computer Science Engineering
Specialization: System Engineering
Indian Institute of Technology Mandi

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Examination	University	Institute	Year	CGPA/%
Post Graduation(M.Tech)	IIT Mandi	IIT Mandi	2022-present	7.94

EXPERIENCE

- **SDE Intern** *(Jaipur, Rajasthan)*
  Indicrafter Pvt. Ltd. *(June'20- Oct'20)*
  - Modernized legacy APIs through the migration of Visual Basic code to C#.
  - Developed efficient MySQL queries and stored procedures.
  - Created REST APIs for enhanced system functionality.

MAJOR PROJECT

- **Investigating User Behaviors' Towards Phishing Mail Using Eye Gaze Movement** ◯ *(M.Tech Project)*
  *(Guide: **Dr. Varun Dutt**)* *(August'23-Present)*
  - **Objective:** Develop a Phishing Micro-World to analyze user interactions with both Human Generated and ChatGPT3 generated phishing emails containing various cognitive biases using users' gaze movement. The motive is to gain valuable insights from the users' gaze movement which helps in enhancing understanding the nature of phishing emails used and developing safeguards against phishing emails.
  - **Tools & Technologies Used:** PHP, JavaScript, MySQL, VS Code, Git, Tobii EyeX Controller.

MINOR PROJECTS

- **Smart Parking App** ◯
  (Smart India Hackathon) *(Nov'23-Dec'23)*
  - Designed and developed APIs using Spring Boot facilitating efficient communication between various components of the system.
  - Implemented the Haversine Distance Algorithm to accurately calculate the distance between two geographic locations, enhancing the precision of location-based services within the application.
  - Developed efficient MySQL queries for **CRUD** operations.
  - **Tools & Technologies Used:** Java, MySQL, SpringBoot, Gradle, Rest APIs.

- **Self-Driving Racing Kart** ◯
  *(CS662: Mobile Virtual Reality & Artificial Intelligence, Instructor: **Dr.Varun Dutt**)* *(Nov'23)*
  - Developed a Unity 3D racing kart game integrating deep reinforcement learning and imitation learning techniques like **PPO**, **Behavioural Cloning** and **GAIL** using ML-Agents toolkit.
  - Ensured collision-free completion of the race course by training the kart agent.
  - Engineered reward structures to optimize the learning process.
  - **Tools & Technologies Used:** Unity 3D, C#, ML-Agents, Visual Studio.

- **BlueControl v1.0** ◯
  *(EE536: Internet Of Things, Instructor: **Dr.Padmanabhan Ranjan & Dr.Siddhartha Sarma**)* *(May'23)*
  - Developed a SCPI-based Instrument Automation Tool to enable wireless control of various instruments through Bluetooth technology.
  - Utilized two Raspberry Pi devices, one serving as the base station and the other as the remote unit connected to multiple instruments.
  - Implemented real-time instrument detection, enhancing automation by 100%.
  - **Tools & Technologies Used:** Python, PyBluez, Raspberry Pi, SCPI.

- **Automated Plagiarism Dectector** ◯
  *(IC:152: Computing & Data Science, Instructor: **Dr.Rohit Saluja**)* *(Dec'22)*
  - Developed an automated plagiarism detection tool as part of my role as a Teaching Assistant for IC152.
  - Implemented various phases like file extraction, plagiarism report generation, and threshold-based plagiarism analysis.
  - **Tools & Technologies Used:** Java, Gradle, Python, JSoup, IntelliJ.

- **Network Load Analysis Using Apache Spark** 🎧
  *(CS561: MapReduce & BigData, Instructor: **Dr.Arti Kashyap**)* *(Nov'22)*
  - Developed a Java application aimed at analyzing the load on the IIT Mandi network.
  - Utilized Java sockets to stream network logs, subsequently processing the data through Apache Spark.
  - Developed a NodeJs based web application to present real-time graphs of the network logs.
  - **Tools & Technologies Used:** Apache Spark, Java, NodeJs, Express, Web Sockets.
- **Moodle-ComplValidator Integration**
  *(CS515: Advance Computer Science Practicum, Instructor: **Dr.Manas Thakur**)* *(Nov'22)*
  - Developed a Spring Boot application that simplifies grading workflow by automatically downloading student code from Moodle, leveraging Compl Validator for evaluation, and uploading grades back to Moodle.
  - Significantly reduced manual workload, resulting in substantial time savings for grading tasks.
  - **Tools & Technologies Used:** Java, Gradle, Postman, SpringBoot, Rest APIs.
- **Compiler Construction** 🎧
  *(CS502: Compiler Design, Instructor: **Dr.Manas Thakur**)* *(Aug'22 - Nov'22)*
  - Developed 5 phases of Compiler: **Syntax Analysis**, **Semantic Analysis**, **Intermediate Code Generation**, **Live Variable Analysis**, and **Register Allocation** for **Java Programming Language** in Java.
  - **Tools & Technologies Used:** Java, JavaCC, JTB, IntelliJ.

POSITIONS OF RESPONSIBILITY

- **Teaching Assistant**
  - **CS307P: Systems Practicum** *(Jan'24-Present)*
    (Instructor: **Dr.Varun Dutt**)
  - **CS308P: Large Application Practicum** *(Aug'23-Dec'23)*
    (Instructor: **Dr.Varun Dutt**)
  - **CS309: Information and Database Systems** *(Feb'23-May'23)*
    (Instructor: **Dr.Rohit Saluja**)
    * Assigned as Head TA and managed coordination between 5 TAs and Dr.Rohit Saluja.
  - **IC152: Computing & Data Science** *(Dec'22-Jan'23)*
    (Instructor: **Dr.Rohit Saluja**)
    * Developed **Automated Plagiarism Detector** as Teaching Assistant of the course.
  - **CS308: Large Application Practicum** *(Aug'22-Dec'22)*
    (Instructor: **Dr.Varun Dutt**)

TECHNICAL SKILLS

- **Tools & Technology**: Java, MySQL, SpringBoot, JavaScript, ReactJs, C++, Python, Postman, Git, Docker.

COURSES TAKEN

- Mobile Virtual Reality & Artificial Intelligence 🎧
- Internet Of Things 🎧
- Performance Analysis Of Computer Networks 🎧
- Compiler Design 🎧
- MapReduce & BigData
- Advance Computer Science Praticum 🎧
- Data Structures & Algorithms 🎧
- Network System: Modelling & Analysis 🎧

ACHIEVEMENTS

- Developed **BlueControl v1.0**, which has been made **open-source** (in) by IIT Mandi.
- Secured 177th **rank** (☁) in **GeeksForGeeks** weekly contest among 3894 participants.
- Among the top **13.78%** users on Leetcode **(Link)**.
- Secured 99.57 percentile in Graduate Aptitude Test in Engineering (GATE) 2022 in CS & IT.

VOLUNTEER WORK

- **Google Developer Students Club**
  (Core Team Member) *(Sept'2023-Present)*
  - Coordinator of Institute-level technical events for enhanced community engagement and skill development.
- **Clean Campus Green Campus**
  (Clean Up Drive Volunteer) *(Oct'23)*
  - Volunteered in a clean drive organised by the institute to clean up the nearby areas under **Swachhata Hi Seva Campaign** (in).