

# Rohit Kumar

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## 🎓 EDUCATION

### 🎓 BTech in Computer Science And Engineering

Indian Institute of Technology Jammu ( IIT ), India

7.4 / (10 is highest)

2017 – 2021

### 🔗 KaggleX 3rd Cohort Mentee

Reinforcement learning with Mentor [Shrinivasan Sankar](#)

08/2023 – 11/2023



### 🌟 Coursera Certifications

Deep Learning Specialisation from DeepLearning.AI; Reinforcement Learning Specialisation from University of Alberta; Computational Neuroscience by University of Washington; Synapse, Neuron and Brain from Hebrew University; AI for Medicine Specialisation from DeepLearning.AI



## 👜 WORK EXPERIENCE

### AI Engineer

[Captury GmbH](#), acquired by [DARI Motion, USA](#).

07/2021 – Now

Saarbrücken, Germany

✅ 🗣️ 4<sup>th</sup> member to join Captury

🔗 🌟 **Ball Tracking:** Leading the development of sports ball tracking using vision-based AI algorithms.

04/2024 – Present

✅ 🎸 **Instrument Tracking:** Spearheaded the development of advanced AI-driven tracking systems for guitar and violin, leveraging vision-based models. Engineered a robust 3D rendering pipeline in Blender for high-fidelity data generation, significantly improving model accuracy and performance.

12/2023 – 08/2024

✅ 🖐️ **Low-Resolution Hand Tracking :** Pioneered the development of cutting-edge hand tracking technology, optimizing performance for low-resolution inputs, and delivering highly accurate results across diverse real-world applications.

01/2022 – Present

🔗 [Feature Release](#)

✅ 🔗 **Python Bindings:** Developed a Python library using Python-C APIs for batch processing, server farm utilization, dataset generation, and efficient internal testing. Widely used internally and by clients for processing large volumes of 3D-tracking data.

03/2022 – 06/2022 [🔗](#)

🏠 **In-House Data Generation:** Leveraged expertise in 3D simulation software (Unreal Engine, Unity3D, Blender) and CapturyLive for compelling demos and data generation, enhancing Captury's market presence.

🗣️ **Client Support Calls:** Led client interactions, effectively identified their needs, and provided tailored technical solutions.

🔗 **Software Builds:** Enhanced and optimized the build process through advanced CMake scripting and C++ integration.

## RESEARCH & PUBLICATIONS

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### **Reinforcement Learning based Smart Data Agent for Location Privacy**

AINA'21 (Advanced Information Networking and Applications) Page(s): 657-671

08/2020 – 01/2021



### **Smart Data Agent for Preserving Location Privacy**

IEEE-SSCI'20 (Symposium Series on Computational Intelligence) Page(s):2567 - 2575

01/2020 – 08/2020



### **Term Paper on Adaptation in cloud computing**

Advisor: Prof. Naveen Sharma, Rochester Institute of Technology, New York, USA

01/2021 – 04/2021



### **Conference Paper Reviewer**

8th international conference on Computer Vision and Image Processing ([CVIP](#)) 2023

06/2023 – 09/2023

## INTERNSHIPS

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### **Year long Research Collaboration**

with National Institute of Informatics(NII), Japan. Advisors: Prof. Isao Echizen NII,Japan; Dr. Harkeerat Kaur, IIT Jammu

04/2020 – 03/2021

NII Japan - IIT Jammu

### **Deep Learning Intern**

Captury GmbH, Mentor: Dr. Nils Hasler (CTO) & Michal Ritcher (Sr. SW Dev.), Co-Founders

05/2020 — 12 / 2020

Saarbrücken, Germany

- **Fast Background Subtraction** : Developed a deep learning model with randomization of foreground (Humans) and backgrounds(COCO)

- **3D Face landmark Annotation**: back-projection using ray cast in multiview geometry instead of point triangulation.



- **Facial expression - shape key prediction** : Worked on shape key prediction using 3D characters from Reallusion, data generation, and randomization of shape keys in Blender. Analysis using SVD and initial Deep Learning model - [FAN model](#). This project eventually led to a bigger project in Captury to solve the task using Deep Learning.



### **Machine Learning Research Internship**


Topic: Object Detection Advisor: Prof. Virendra Singh, IIT Bombay

05/2019 – 07/2019

Bombay, India

## SKILLS & OTHERS

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 **Tech Stack**: Python. C++, C, CPython, CMake, Pytorch, Tensorflow, Qt, Unreal Engine, Unity, Blender, Reallusion, Deep Learning, Research, Computer Vision, Reinforcement Learning, NLP, Linux, Git,

 **Leadership**: Cultural Secretary, IIT Jammu 2019-2020. Led a team of 30 for 10 day long Foundation Program



 **Hackathons**: InterIIT Tech Meet 2019 - Bosch Route Optimisation, InterIIT Tech Meet 2018 - PlutoX Innovate for IIT by Prithvi.AI, Mazex in Technunctus, IIT Jammu

