

# Rohit Kumar

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“It is essential to understand our brains in some detail if we are to assess correctly our place in this vast and complicated universe we see all around us.” - Francis Crick

## TIMELINE

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### Artificial Intelligence Software Developer, Captury GmbH

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

07/2021 – Now  
*Saarbrücken, Germany*

i) As a AI developer, I was responsible for the successful development and integration of a deep learning-based hand tracking feature for low resolution images. Starting in July 2021, I led the project from the generation of the dataset to the final implementation of the neural network architecture. I continually gathered client feedback and made improvements to ensure that the final product met their expectations. The first, deployable ready version was integrated in Captury Software in March 2022.

ii) I developed a python library using Python-C APIs for Captury, taking ownership of all aspects from start to finish, including feature development and improvement implementation. This extension enhances the power of the tracking software, offering pythonic features for batch processing, server farm, dataset generation, and fast internal testing. The library is widely used internally for in-house data generation e.g handpose data and by clients for processing large amounts of 3D-tracking data without UI or on a server farm.

iii) I have extensive experience with 3D simulation software such as Unreal Engine, Unity3D, and Blender, and have utilized these tools to create captury software demos including for oculus quest and generate synthetic data. This combination of technical skills and creativity has enabled me to effectively demonstrate the capabilities of captury software and drive innovation in the field.

### Term Paper on Adaptation in cloud computing

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

01/2021 – 04/2021  
[Github](#)

During my coursework on Adaptive Software Engineering, I took the initiative to complete a research project on Reinforcement Learning Methods in Adaptation in Cloud Computing. This project provided me with the opportunity to apply my knowledge of software engineering and reinforcement learning to real-world challenges in cloud computing. I successfully completed the term paper and made the results available on GitHub for future reference.

### Deep Learning & Computer Vision Intern, Captury GmbH

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

10/2020 – 12/2020

Successfully developed a background subtraction model for Captury software, including creation of dataset and development of neural network architecture. Experimented with deep learning methods under guidance of the company's co-founders and the model was successfully implemented in Captury software.

### Software Engineer Intern, Captury GmbH

Mentor: Dr. Nils Hasler, CTO, Cofounder

05/2020 – 07/2020

Successfully completed End-to-end 3D face landmarks annotation and Facial expression transfer via morph-key prediction. My work on the latter project eventually led to a major project within Captury.

### Research Collaboration with National Institute of Informatics(NII), Japan

Advisors: Prof. Isao Echizen NII, Japan; Dr. Harkeerat Kaur, IIT Jammu

04/2020 – 03/2021

During my senior year, I collaborated with the National Institute of Informatics (NII) in Japan for a year-long research project that aimed to investigate the potential of deep learning and reinforcement learning methods in preserving location privacy. The results of this collaboration were published in two papers, one at the AINA'21 conference and another at the IEEE-SSCI'20 symposium.

Reinforcement Learning based Smart Data Agent for Location Privacy  
*AINA'21 (Advanced Information Networking and Applications) Page(s): 657-671*  
 Harkeerat Kaur; Rohit Kumar; Isao Echizen

Smart Data Agent for Preserving Location Privacy  
*IEEE-SSCI'20 (Symposium Series on Computational Intelligence) Page(s):2567 - 2575*  
 Harkeerat Kaur; Isao Echizen; Rohit Kumar

### **Machine Learning Research Intern, IIT Bombay**

Advisor: Prof. Virendra Singh, IIT Bombay

05/2019 – 07/2019

*Bombay, India*

Contributed to a project on object detection using deep learning methods while interning at IIT Bombay. Worked under the guidance of Professor Virendra Singh

### **BTech in Computer Science And Engineering**

Indian Institute of Technology( IIT ) Jammu, India

07/2017 – 05/2021

*CGPA: 7.4/10*

While studying at IIT Jammu, I honed my skills in AI through hands-on research and development projects and enriched my knowledge through online courses from renowned institutions like Stanford Online, MIT OCW, and Coursera. Additionally, as Cultural Secretary, I effectively led a 30-member team to execute a successful 10-day foundation program.

### **Prepared for JEE-ADVANCED Exam**

Successfully prepared for and passed JEE-ADVANCED, the entrance exam to enter IITs in India, with a rank of 6556.

04/2016 – 05/2017

### **Star Public School, Rajasthan, India**

High school examination, CBSE Board, India

04/2015 – 03/2016

*85.67 / 100*

### **OTHER COURSES**

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