Punit Kunjam

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EDUCATION

International Institute of Information Technology (IIIT), Naya Raipur, Chhattisgarh, IN

B.Tech. in Computer Science and Engineering (129 credits) Aug. 2017 – Aug. 2021

Relevant Coursework: Introduction to Computers & Programming (C), Data Structures and Algorithms, Operating System, Object Oriented Methodologies, Design and Analysis of Algorithms, Software Engineering, Big Data Technology

PEER-REVIEWED PUBLICATIONS

- Munawar, A., Li, Z., **Kunjam, P.**, Nagururu, N., Ding, A.S., Kazanzides, P., Looi, T., Creighton, F.X., Taylor, R.H. and Unberath, M., "Virtual reality for synergistic surgical training and data generation." *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization* (2021): 1-9. **Outstanding Paper Award**
- Simonson, A., **Kunjam, P.**, and Maes, P., "Pockets: User-Assigned Menus Based on Physical Buttons for Virtual Environments." *ACM SIGGRAPH 2021 Posters*. 2021. 1-2.

AWARDS & HONORS

- Recipient of the **Outstanding Paper Award**, 15th Augmented Environments for Computer-Assisted Interventions (AE-CAI) workshop. 2021

PROFESSIONAL EXPERIENCE

Deloitte USI, Bangalore, Karnataka IN

Business Technology Analyst (Software Engineer) Jan. 2022 – Present

- Working on a financial auditing tool.

RESEARCH EXPERIENCE

Johns Hopkins University, Baltimore, Maryland

Visiting Undergraduate Student, Laboratory for Computational Sensing and Robotics Jan. 2021 – June 2021

(Principal Investigator: Prof. Mathias Unberath, Assistant Professor)

AMBF+: an open-sourced simulation framework that generates data for downstream algorithm development and allows users to practice their surgical skills.

- Collaborated with a multidisciplinary research team for developing a virtual drilling simulator for lateral skull-base surgery.
- Ideated and developed a collision algorithm to provide haptic feedback on the drill shaft's collision with the anatomy.
- Leveraged CHAI3D framework for developing haptic applications.
- Programmed OpenGL in C++.

Massachusetts Institute of Technology (MIT), Cambridge, MA

Research Intern, MIT Media Lab, Fluid Interfaces Aug. 2020 – Jan. 2021

(Principal Investigator: Mr. Aubrey Simonson, Graduate Research Assistant)

Pockets: a simple means of organizing and carrying 3D tools and other objects in virtual environments.

- Designed and developed a system to minimize the necessity of 2D menus in 3D space.
- Built a prototype for paint application using unity3D to define the concept of Pockets.
- Successfully tested the functionality of Pockets in VR with Oculus Rift.

University of Canterbury, Christchurch, New Zealand
Research Intern, Human Interface Technology Lab June 2020 – Dec. 2020
(Principal Investigator: Dr. Adrian Clark, Senior Lecturer)
Collision Avoidance System in Virtual Reality

- Implemented a system to avoid collision between users who may or may not be immersed in the virtual environment.
- Compared different methods of hazard indications for users immersed in VR.
- Achieved the tasks employing a machine learning-based human pose estimation framework.

Johns Hopkins University, Baltimore, Maryland
Visiting Research Intern [Canceled], Sensing, Manipulation, and Real-Time Systems Lab May 2020
(Principal Investigator: Prof. Peter Kazanzides, Research Professor)
Surgical Procedures in Augmented Reality

- Expected to work on an augmented reality head-mounted display research "ARssist."

OTHER EXPERIENCE

Mimyk Medical Simulation, Bangalore, Karnataka
Intern, Indian Institute of Science Bangalore June 2019 – July 2019
(Principal Investigator: Dr. Nithin Shivashankar, Co-Founder)
Endomimyk: a novel virtual reality endoscopy simulator used to examine internal body parts.

- Created 3D interactive training modules using unity3D for Endomimyk.
- Identified major problems in medical disciplines.
- Researched various applications of VR in surgical procedures.

WowExp Technologies Pvt. Ltd., Bangalore, Karnataka
Intern, WeWork, Bangalore May 2019 – June 2019
(Principal Investigator: Mr. Navin Manaswi, Founder & CEO)
Retail entertainment platforms

- Developed 3D content using open-source libraries for the company's website.
- Worked with babylon.js to simulate 3D graphics on the website.
- Learned how a startup works at an early stage.

StareOut Games, Hyderabad, Telangana
Game Development Intern Jan. 2019 – March 2019
(Principal Investigator: Mr. Vamsi Raju, Co-Founder)
Hyper-casual games

- Designed and evaluated the prototype for a game using the unity3D game engine.
- Learned to develop games for the android platform.
- Programmed in C# to implement gameplay mechanics.

LEADERSHIP & VOLUNTEER EXPERIENCE

TSoC (The Society of Coders), IIIT Naya Raipur, Chhattisgarh
Game Development and AR/VR Lead July 2018 – August 2021

- Conducted workshops for unity3D and its applications.
- Delivered lectures on applications of AR/VR and the basics of game development.

Technovate (Technical and Cultural Fest), IIIT Naya Raipur, Chhattisgarh
Event Head March 2018

- Successfully conducted a LAN gaming tournament on Technovate 2018 at IIIT NR.

PERSONAL PROJECTS

Tower of Hanoi Oct. 2020 – Nov. 2020

- Built an immersive learning experience for solving the Tower of Hanoi puzzle.
- Developed a 3D open-world game from scratch using unity3D.
- Wrote scripts in C# to manipulate objects' behavior in 3D space.

Proxy Interpreter Sep. 2020 – present

- Blending NLP & AR for developing a wearable system to aid hearing-impaired communities.
- Potential use of Nreal Light/Nimo Planet AR glasses to integrate AR experience.
- Using IBM Watson for speech recognition and other cloud operations.
- Creating a user-friendly application using unity3D.

AI Assistant JARVIS May 2020 – June 2020

- Built an AI-powered virtual assistant.
- Features an AR avatar with a voice-enabled chatbot feature with sophisticated operations.
- Used Google ARCore SDK to build AR experience in the android platform.

INTERESTS & ACHIEVEMENTS

- Played national-level chess tournaments in high school.
- Won multiple competitive gaming tournaments.
- Selected for the Game Oasis Hackathon 2019 (one of the world's largest global gaming hackathons) co-hosted with Binance Labs, Cocos-BCX, Contentos, Harmony, and Matic Network.

SKILLS

- **Programming Language:** C#, C++, Basic Python
- **Tools/Frameworks:** Unity 3D, CHAI3D, Visual Studio, Git, GitHub
- **Industrial:** Data Structures and Algorithms, Game Development

REFERENCES

Prof. Mathias Unberath, Assistant Professor
Department of Computer Science, Johns Hopkins University
unberath@jhu.edu | Website

Dr. Adrian Clark, Senior Lecturer
School of Product Design, University of Canterbury
adrian.clark@canterbury.ac.nz | Website

Additional references are available upon request.