

KHUSHDEEP SINGH

Robotics and AI aspirant

@ k.mann@campus.tu-berlin.de

in khushdeepsingh123

+49 1575 4498213

khushdeep-singh

R⁶ Khushdeep_Singh_Mann

AI Research Building, 72076 Tübingen, Germany

Khushdeep Singh



EXPERIENCE

Master Thesis at BethgeLab

AI research Centre, University of Tübingen

April'20 - Present

Tübingen, Germany

- My work involves developing the pipeline for exploring the internal dynamics of continuous Reinforcement Learning agents with the existing baseline algorithms
- Bench marking the baseline RL algorithms with Self-Supervised Learning technique

Research Assistant

Forschungszentrum Informatik (FZI)

Feb- May 2020

Berlin, Germany

- Worked on hardware testing for toy autonomous driving car
- Carried out software simulation for object detection framework

Research Engineer

Centre for Robolution

Feb-May 2018

Hyderabad, India

- Designing swarm robots that can perform collaborative tasks

Research Internship

University of Plymouth

May-July 2016

Plymouth, United Kingdom

- End effector design for mobile manipulator: CHAP V1
- End effector sustains 2kg payload

PATENT

Hybrid Robot

Visvesvaraya National Institute of Technology

June 2017

Nagpur, India

- Under review- Indian patent application number 201721020615

PUBLICATIONS

TAROS Conference

July'2017

Guildford, United Kingdom

- An Open-Source Tele-Operated Mobile Manipulator: CHAP V1

IEEE ROBIO International Conference

Dec'2016

Qingdao, China

PERSONAL DETAILS

- Date of Birth: 26/01/1994
- Nationality: Indian
- Marital Status: Single

EXECUTIVE SUMMARY

"A self-driven enthusiast passionate about Robotics and Artificial Intelligence"

EDUCATION

M.Sc. in Autonomous Systems

Technische Universität Berlin

Oct'19 - Present

Berlin, Germany

- Exit year of double degree program
- Specialization: Applications of Autonomous systems

M.Sc. in Autonomous Systems

KTH Royal Institute of Technology

Sept'18 - June'19

Stockholm, Sweden

- Entry year of double degree program
- Relevant courses: Robotics, Distributed AI, Deep Learning, Control systems

Master of Science (double degree with integrated mobility)

EIT Digital Master School

Sept'18 - Present

Brussels, Belgium

- Major: Autonomous Systems
- Minor: Innovation and Entrepreneurship

B.Tech. in Electronics Engineering

Visvesvaraya National Institute of Technology (VNIT)

Sept'13 - May'17

Nagpur, India

MOST PROUD OF



Co-founder of Robotics Organization
Core member of Student Robotics Organization (IvLabs) at VNIT along with other colleagues. The organization works actively in Robotics and AI

- Design Analysis and Development of Low Cost Under actuated Robotic Hand

PROJECTS

Autonomous warehousing system

DAI-Labor, TU Berlin

📅 Oct'19- Feb'20

📍 Berlin, Germany

- Worked on simulation of Multi-agent robotic system for fetching and storing packages in industry environment
- Developed the motion planning and obstacle detection nodes

Acoustic Sensing for soft robotic fingers

RBO Lab, TU Berlin

📅 Oct'19- Feb'20

📍 Berlin, Germany

- Acoustic sensing uses 'sound' technique to acquire information between soft robotic finger and the object in contact
- Experimenting the sensitivity of this technique to the inflation pressure in soft robotic finger

Bachelor's Thesis-Snake robot reconfigurable into Quad copter (Hybrid Robot)

IvLabs, VNIT

📅 Oct'16- Apr'17

📍 Nagpur, India

- An attempt to make snake robot's navigation simpler by imparting flying properties to the robot

Design and Control of Quad copter

IvLabs, VNIT

📅 Nov'- Dec'15

📍 Nagpur, India

- A quad copter capable of doing standard maneuvers

Development of five fingered robotic hand

IvLabs, VNIT

📅 May'- Oct'15

📍 Nagpur, India

- Low cost prosthetic hand suitable for sign language demonstrations and in-hand manipulation

Design and control of Biped robot

IvLabs, VNIT

📅 Sept'- Nov'14

📍 Nagpur, India

- A robot capable of walking with six degrees-of-freedom



Meeting of National Innovation Club
Invited twice to President's House of India for presentation of Robotic hand and Hybrid robot



Excellence Award
Innovative robotic projects at IvLabs, VNIT

SKILLS

Robotics Software: Robot Operating System (ROS), VREP, MORSE

Robotics Hardware: Drones, UAVs, Snake robots, Prosthetics, Manipulators, Biped

Deep Learning: PyTorch

Distributed AI: GAMA

Reinforcement Learning: MuJoCo, OpenAI Gym, PyBullet

Processors: Arduino, Atmel, ARM Cortex, Rasberry Pi

CAD Design: Solidworks, AutoCad

Machines: CNC, 2D-3D Printing

Actuators: Servos, Brushless DC (BLDC), Dynamixels, Herkules

Programming: C, C++, Python, Java, Embedded C

Productivity tools: MS Office, LaTeX, Git

LANGUAGES

English



REFEREES

Mr. Steffen Schneider

@ steffen.schneider.94@gmail.com

✉ PhD candidate at University of Tübingen, IMPRS-IS Tübingen and ELLIS

Prof. Shital Chiddarwar

@ shitalsc@mec.vnit.ac.in

✉ Associate Professor, M-0-9 FMS and Robotics Laboratory Department of Mechanical Engineering