



Niyati Rawal

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● WORK EXPERIENCE

11/2021 – CURRENT Modena, Italy

EARLY STAGE RESEARCHER (ESR) EU MARIE CURIE PROJECT (PERSEO)

Working on Vision and Language Navigation that combines Computer Vision, Natural Language Processing and Robotics

06/2020 – 10/2021 Darmstadt, Germany

RESEARCH ASSISTANT TECHNICAL UNIVERSITY OF DARMSTADT

Worked on facial expressions in human-robot interaction

05/2019 – 09/2019 Nancy, France

INTERN: PERCEPTION AND INTERPRETATION OF HUMAN ACTIVITY INRIA

Compared Markovian models for human activity recognition and prediction

10/2017 – 03/2018 Osaka, Japan

TRAINEE NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Implemented RNN for explaining the development of visual attention to faces in infancy

● EDUCATION AND TRAINING

11/2021 – CURRENT Modena, Italy

DOCTORAL STUDIES: INFORMATION AND COMMUNICATION TECHNOLOGIES University of Modena and Reggio Emilia

Studying Vision and Language Navigation that combines Computer Vision, Natural Language Processing and Robotics

Address Modena, Italy

10/2018 – 09/2019 Tarragona, Spain

MASTER'S IN COMPUTATIONAL ENGINEERING AND MATHEMATICS Rovira i Virgili University, Open University of Catalonia

Numerical methods in engineering, Simulation, Graphs and Applications, Data Structures and Algorithms, Representation of Knowledge, Pattern Recognition, High Performance Computing, Error Correcting Codes

Thesis title: Top-down approach to compare the moral theories of Deontology and Utilitarianism in Pac-Man game setting

Address Tarragona, Spain

04/2014 – 03/2018 Osaka, Japan

B.E. MECHANICAL ENGINEERING Osaka University

Mechanics of materials, Dynamics of machinery, Hydraulics, Thermodynamics, Modeling and control of dynamic systems, Programming, Mathematical analysis

Conducted 1 year research in the Department of Adaptive Machine Systems.

Thesis title: The role of featural and configural processing in the development of visual attention

Address Osaka, Japan

04/2013 – 03/2014 Tokyo, Japan

CERTIFICATE IN JAPANESE LANGUAGE Tokyo University of Foreign Studies

Address Tokyo, Japan

2009 – 2012 New Delhi, India

HIGH SCHOOL Convent of Jesus and Mary School

Address New Delhi, India

● LANGUAGE SKILLS

Mother tongue(s): **HINDI** | **ENGLISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
JAPANESE	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● ADDITIONAL INFORMATION

PUBLICATIONS

Journal Papers

Niyati Rawal and Ruth Maria Stock-Homburg, "**Facial emotion expressions in human-robot interaction: A survey**", International Journal of Social Robotics, 2022.

Niyati Rawal, Dorothea Koert, Cigdem Turan, Kristian Kerstins, Jan Peters and Ruth Stock-Homburg, "**ExGen Net: Learning to Generate Robotic Facial Expressions using Facial Expression Recognition**", Frontiers in Robotics and AI, 2022.

Workshop Papers

Yukie Nagai and Niyati Rawal, "**Where and Why Infants Look: A recurrent neural network for the development of visual attention**", in Proceedings of the 21st Biennial International Congress on Infant Studies, June 30-July 3, 2018.

Niyati Rawal and Yukie Nagai, "**Computational Modelling Approach to Investigate the Development of Scan Paths in Infants**", The 6th Symposium of Japanese Society of Developmental Neuroscience, November 25-26, 2017.

Niyati Rawal, Takato Horii, and Yukie Nagai, "**How does visual attention to face develop in infancy?: A computational account**", in Proceedings of the HAI 2017 Workshop on Representation Learning for Human and Robot Cognition, October 17, 2017.

HONOURS AND AWARDS

Scholarships Marie Skłodowska-Curie Actions Fellowship - PERSEO Project

Monbukagakusho (MEXT) Scholarship: Received 5 year scholarship by the Japanese Government to pursue my bachelor degree in Japan

CJM PTA Scholarship for consistent effort (2010)

CJM PTA Scholarship for consistent effort (2009)

Competitions RoboCup Japan Open (2017): It is a robot soccer league where the robots operate autonomously. Our team JoiTech won the first prize.

PROGRAMMING

Coding skills

C/C++ : Have written codes for a line tracer robot, to perform simulation for a robotic arm, picture editing using OpenCV and a code to create a game using ODE

Python: For machine learning

Java: AI game

Matlab: For numerical methods in engineering Ruby: Attended Ruby Camp (2017) in Matsue, Japan

ORGANISATIONAL SKILLS

Organisational skills Was a member of the Robotics Club at school. Participated in an inter-school Catch Robot Battle Contest (2015). It was a team based event where I directed the designing and assembly of the robot.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills Excellent communication skills with high school students gained through my experience as a Math tutor.