

## ● WORK EXPERIENCE

11/2021 – CURRENT – Modena, Italy

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

06/2020 – 10/2021 – Darmstadt, Germany

**RESEARCH ASSISTANT – TECHNICAL UNIVERSITY OF DARMSTADT**

Worked on facial expressions in human-robot interaction

05/2019 – 12/2019 – Nancy, France

**INTERN: PERCEPTION AND INTERPRETATION OF HUMAN ACTIVITY – INRIA**

Compared Markovian models for human activity recognition and prediction

Nancy, France

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

Osaka, Japan

## ● EDUCATION AND TRAINING

11/2021 – CURRENT – Modena, Italy

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

10/2018 – 09/2019 – 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

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

04/2013 – 03/2014 – Tokyo, Japan  
**CERTIFICATE IN JAPANESE LANGUAGE** – Tokyo University of Foreign Studies

2009 – 2012 – New Delhi, India  
**HIGH SCHOOL** – Convent of Jesus and Mary School

● **LANGUAGE SKILLS**

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

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>JAPANESE</b>	C2	C2	C2	C2	C2

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

● **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 Skolodowska-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

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

## ● ORGANISATIONAL SKILLS

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### Organisational skills

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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

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### Communication and interpersonal skills

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

## ● PROGRAMMING

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### Coding skills

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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