SHIVALIKA GOYAL (PhD Scholar at CSIR-CSIO)

SHIVALIKA GOYAL

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I am Shivalika Goyal currently pursuing my PhD at CSIR-Central Scientific Instruments Organization (CSIO) under Dr. Amit Laddi who is holding a position of Principal Scientist and heading the lab named **"Imagitronics"** in the department **"Biomedical Applications (BMA)."**

I joined PhD through AcSIR channel and actively working in the domain of computer vision comprising Image Processing techniques to explore the potential of Eye Gaze Tracking modality, making it more optimized and accessible that comprehends, supports and predicts human behavior in complex environments bridging the gap between humans and machines for a secure and sustainable future.

Major Subjects Studied During Curriculum

Digital Image Processing	Statistical Analysis & Machine Learning	Research Methodology, Publication & Ethics
Design & Analysis of Algorithms	Neuroimaging & Cognition	Physiology for Engineers

Work Experience

27 September 2022 - 31 March 2023

Project Associate I

CSIR- Central Scientific Instruments Organisation (CSIO)

Here, I researched and worked on designing Vascular Sclerotherapy Guidance and Assistance Tools (Vascu-Guide) for vein-detection, employing Image Processing, Machine Learning, and Deep Learning.

01 September 2020 - 31 August 2021

Research Analyst

In-Med PROGNOSTICS

Here, I worked on a project comprised the structuring of algorithms in EEG Data Analysis and Neurodegenerative disease detection & Classification and further to integrate it with different EEG modalities.

01 October 2019 - 30 November 2019

Special Trainee Officer

SIDDHARTH CT SCAN & IMAGING CENTRE

Here, I trained in MRI, CT-SCAN along with conducting Neurological disorders tests using EEG, NCV and EMC (specially in Brain Speculation Field).

01/09/2018 - 03/10/2018

Technical Intern

NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES (NIMHANS)

Here, I observed EEG-ERP based experiments and carried out recordings and data analysis. Also, I fabricated my skills on Data Analysis in Excel and SPSS on descriptive level.

For the Session 2017-18

Visiting Faculty

JAIN VISHVA BHARATI INSTITUTE, LADNUN (RAJASTHAN)

Here, I taught and trained to M.A. students of Yoga and Science of Living for the Session of 2017-18.

Education

August 2021 - PRESENT

PhD Scholar

CSIR - CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION

Successfully completed PhD Coursework with 8.29 CGPA in Cumulative Grade Report -1.

01 August 2015 - 01 October 2020

Integrated M.Tech in Cognitive Neurosciences

CENTRE FOR CONVERGING TECHNOLOGIES, RAJASTHAN UNIVERSITY

I secured "O" (Outstanding) grade in Dual Degree B.Tech+M.Tech and also ranked "1" in my specific branch of Cognitive Neurosciences.

2013 - 2014

Intermediate (PCMB)

ST ANSELM'S PINK CITY MALVIYA NAGAR, JAIPUR (CBSE)

I scored 80.60% in the Board Examinations with both Mathematics and Biology as the choice of subjects.

2010 - 2012

Matriculation

ST ANSELM'S PINK CITY MALVIYA NAGAR, JAIPUR (CBSE)

I scored 93.10% with all compulsory subjects as per the course curriculum.

Upadhi of Nipun in Kathak Dance

BHATKHANDE SANGIT VIDYAPITH

Secured Nipun III in Kathak Dance.

Skills

TECHNICAL SKILLS ──────── 90%

Python, OpenCV, sklearn, pandas, MS-Office, SPSS, Adobe Pro, Origin, ChemDraw, Graphics, Mendeley, Turnitin, Data Collection and Draft Preparation, Manuscript Submissions and Response Handling.

SOFT SKILLS ──────── 90%

Trust, Assertiveness, Team Work and Ethics, Prioritization, Active Listening and Grasping, Respect, Emotional Intelligence

LANGUAGES ──────── 100%

Hindi - Native
German (B1 - Independent User)
English - Fluent (Read, Write and Understand)

Academic / Professional Certifications

- **Organising Committee Member-** Certificate of Appreciation Workshop on Instruments for Environment & Food Quality Assurance dated 29/06/2023, organized by the joint collaboration of CSIR-CSIO & ACS-CSIO International Student Chapter during One Week One Lab, Chandigarh.
- **Webmaster (ACS-CSIO Website)-** Certificate of Appreciation in 2nd Bilateral Meet on Innovations in Materials for Energy and Environmental Technologies (iMEET) dated 28/06/2023, organized by CSIR-CSIO during One Week One Lab, Chandigarh.
- Certificate of Participation in Poster Presentation on "Advancements in Healthcare Technologies (AiHT 2023) dated 28/06/2023, organized by the joint collaboration of CSIR-CSIO & IEEE AcSIR-CSIO Student Chapter during One Week One Lab, Chandigarh.
- **Best Paper Award-** Certificate in Zonal Seminar on "Emerging Sensors and Electronics Systems (ESES 2023)" dated 28/04/2023, organized by IETE Chandigarh.
- **Winner- Poster Presentation** in "Global Assistive Technology Expo & Conference" dated 23/03/2023, organized by iCONEX, SHESPro, and ICMR, New Delhi.
- Certificate of Participation in *"Winter School in Cognitive Modelling"* dated 16/10/2022, organized by IIT Mandi and Waterloo University.
- Certificate of Participation in *"5 Days Online Workshop on Machine Learning and Cloud Computing (MLCC-2022)"* dated 15/10/2022, organized by Department of Mathematics and Scientific Computing, NIT Hamirpur.
- Certificate of Participation in Online Short-Term Course on *"Python Programming for Artificial Intelligence"* dated 26/09/2022, organized by IIT Warangal.
- Certificate of Participation for the *"5th Workshop on Machine Learning & Data Analytics"* dated 20/06/2022, organized by IIIT Allahabad and Victoria University (Melbourne-Australia).
- Certificate of Participation for presenting a paper titled, *"Designing Real-Time Frame Modification Functions Using Hard Gesture Recognition"* dated 21/05/2022 in the 2nd International Conference on Computer Vision and Robotics (CVR 2022).
- Certificate of Participation in the workshop for *"National Training Program on Patent Search and Analytics (NTP-PSA)"* dated 21/01/2022, organized by CSIR-IMMT and Questel India.
- Certificate of Completion in a two-day workshop on *"Recent Advancements in Biomedical Imaging and Image Processing"* dated 09/11/2021, organized by the Department of Biomedical Engineering, North-Eastern Hill University, Meghalaya.
- Certificate of Participation in the virtual seminar on *"ERP: A portal to cryptic human mind"* dated 21/09/2021, conducted by Department of Physiology, SMS Medical College, Jaipur, Rajasthan.
- Certificate of Participation in the National Webinar on *"Revisiting Self: A Pathway towards Sustainable Mental Health"* dated 15/09/2020, conducted by Department of Physiology, University of Rajasthan, Jaipur.
- Certificate of Participation in the Webinar on *"Masterclass on Branding and Responsibility – What's the Story?"* dated 29/08/2020, conducted by the University of OTAGO, New Zealand.
- Certificate of Participation on the *"Annual Conference of Cognitive Science (ACCS 2018)"* dated 12/10/2018, held at Centre for Linguistic Science & Technology, IIT Guwahati, Assam.
- Certificate of Presentation on *"Brain Modes 2017"* dated 14/12/2017, organized by National Brain research Centre (NBRC), Haryana.
- Certificate of Participation in the *"Pre-Conference Workshop on Research Methodology and Scientific Writing"* dated 17/11/2017 as a Delegate at PGIMER, Chandigarh.
- Certificate of Participation in the *"2nd Advanced Training Programme in Behavioral Neurosciences"* dated 16/11/2017 as Delegate at PGIMER, Chandigarh.
- Certificate of Participation in the *"National Symposium on Cognitive Science (NSCS 2017)"* dated 17/03/2017, held at Centre for Linguistic Science & Technology, IIT Guwahati, Assam.
- Certificate of Completion in a Short-Term Course on *"Brain Science & Technology: Tools and Techniques to understand the Human Brain"* from 14/12/2016 to 18/12/2016 under the CEP of Department of Electrical Engineering, IIT Delhi.

Extra Curricular Certifications

- Certificate of Participation for **"Kathak Dance"** in **The World Culture Festival** hosted by the **Art of Living** dated 13 March 2016 at New Delhi, India.
- Certificate of Participation for **"Kathak Dance"** in college festival **"Saanskrila-2016"** hosted by **Centre for Converging Technologies** dated 29 April 2016 at Jaipur.
- Certificate of Participation for **"Kathak Dance"** in **5th Annual Dance for Kindness Worldwide Flashmob** dated 13 November 2016 at Jaipur.
- Certificate of Participation for **"Classical Kathak Dance"** in **Inter College Youth Festival** hosted by **Centre for Converging Technologies** for the session 2016-17.
- Certificate of Participation for **"Classical Dance"** in 1**5th International Youth Festival Ghoomar 2017** hosted by **University of Rajasthan** dated 05 March 2017.
- Certificate of Participation for **"Dance (Solo)"** in college festival **"Saanskrila-2017"** hosted by **Centre for Converging Technologies** dated 10 December 2017 at Jaipur.
- Certificate of Appreciation for **"Training the Participants in Dance at Summer Training Camp"** in the department of **"Department of Lifelong Learning"** at **University of Rajasthan** dated 15 June 2018.
- Certificate of Participation for **"Dance"** in Summer Camp 2019 hosted by **University of Rajasthan** dated 15 June 2019.

Publications

- Goyal, S., Himani, Laddi, A. (2023). Designing Real-Time Frame Modification Functions Using Hand Gesture Recognition. In: Shukla, P.K., Singh, K.P., Tripathi, A.K., Engelbrecht, A. (eds) Computer Vision and Robotics. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-19-7892-0_26.

Interests and Hobbies

EDIFYING PEOPLE	DANCE AND MUSIC	YOGA & TRAVEL
VALUE BOOKS	ART & CRAFT	NATURE WALK

I wish to achieve a position where the work portfolio is not only limited to working hours (10 to 5 desk jobs). I aim to pursue a profession where I can utilise my existing skills and can explore new experiences everyday like science explorations, research article works, active lab works, new topics and issues. I am highly desiring to work actively balancing my professional and personal time zones without any age constraints. I believe that everything will be better than the best.

References

References are available upon request.

Self Declaration

I, SHIVALIKA GOYAL, do hereby declare that information presented above is true to the best of my knowledge and belief and I shall be solely responsible for any fake information or discrepancy found in them.