

# IVY BHATTACHARYA

Research Assistant, Psychophysiology Lab

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[ivy-96.github.io](http://ivy-96.github.io)

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## RESEARCH INTERESTS

Individual differences in judgment and decision-making processes in the cognition of visual and literary art

## EDUCATION AND RESEARCH TRAINING

- Research Assistant August 2019 – present  
Department of Mathematics, IIT Bombay

**Project:** Control of Attention During Changing Reading Direction for a Single Word – The Case of Reading Numerals in Urdu

- Designed an experiment to discern the differences between self-paced bi-directional and unidirectional reading on the control of attention using a combination of eye-tracking and EEG
- Recorded event-related potentials (ERPs) and fixation durations during reading of Urdu sentences containing numerals

Advisor: Prof Azizuddin Khan ([Psychophysiology Laboratory](#))

- Master of Technology (M. Tech.) Biomedical Engineering July 2017 – July 2019  
Department of Biosciences and Bioengineering, IIT Bombay GPA: 8.89/10.00  
(Research Component: 9.48/10.00)

**Master's Thesis:** Bhattacharya, I. (2019) *Probing Cytoskeletal Changes in Neuronal Stem Cells due to Glucose Dysregulation*. (Master of Technology). Indian Institute of Technology Bombay, Powai. Mumbai. India. ([archived](#)) ([presentation](#)) ([full text](#)) (**manuscript submitted**)

- Conducted a literature review of cellular manifestations of diabetic neuropathy and formulated a project at the intersection of cellular biophysics and neuroscience based on identified gaps
- Planned and executed experiments involving mammalian cell culture, differentiation and gel preparation
- Performed trypsin deadhesion and live cell imaging for cellular contractility studies, Atomic Force Microscopy (AFM) for cellular stiffness studies
- Quantified intracellular activated myosin with pMLC staining to find underlying molecular mechanisms behind observed cellular dynamics

Advisor: Prof Shamik Sen ([Cellular Biophysics Laboratory](#))

- Bachelor of Technology (B. Tech.) Biotechnology June 2013 – May 2017  
School of Bio Sciences and Technology, VIT University, Vellore GPA: 7.49/10.00  
(Research Component: 10.00/10.00)

**Bachelor's Thesis:** Quantification of Trace Elements in Prostatomes, and its Correlation with Sperm Motility and Viability in Fertile and Infertile Human Male Smokers

Advisors: Prof T B Sridharan, Prof Ramesh Pathy M.

- Undergraduate Intern Dec 2015 – Jan 2016  
*Intas Biopharmaceuticals, Ahmedabad*
  - R & D: Production of protein: cloning heavy and light chain genes of monoclonal antibody (p29), transfection to CHO –S cells and screening by the DHFR selection system, followed by limiting dilution cloning
  - Quality Control: 360-degree performance appraisal of the quality control unit, with inputs to enhance efficiency

## ACADEMIC HONORS

- St. Gallen Wings of Excellence – Leader of Tomorrow Award and invited essayist, Artificial Intelligence and the Future of Work – 48<sup>th</sup> St. Gallen Symposium, University of St. Gallen, Switzerland, May 2 – 5, 2018
- Indian Institute of Science Center for Biosystems Science and Engineering BioEngineering Summer Training Fellowship, 2018
- Biotech Innovation Ignition Scholar, Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), funded by National Innovation Foundation (NIF), Department of Science and Technology (DST), Govt. of India, Dec 9 – 29, 2017
- Ministry of Human Resource Development (MHRD), Govt. of India Graduate Teaching Assistantship, 2017 – 2019
- Undergraduate Oral Presentation Award for: **Bhattacharya I.**, Goswami C., Sen D. *Role of Delta Opioids in the Treatment of Parkinson's Disorder*, XIII International Conference of Science, Engineering and Technology, VIT Vellore, May 2 – 3, 2016

## TEACHING EXPERIENCE

- Graduate Teaching Assistant, IIT Bombay, for the course [BB101](#) – Biology for Engineers, 2017 – 2019

## PEER-REVIEWED PUBLICATION

- Singh, D., Bharti, D., **Bhattacharya, I.**, & Devi, S. C. (2018). *Epidemiological Survey of Subjects in the age group of 18 to 24 Years for Failed Secondary Response to Varicella Zoster Virus (VZV)*. Research Journal of Pharmacy and Technology, 11(7), 2817-2820. ([preview](#))

## RESEARCH SKILLS

- Experimental skills: EEG, EMG, Eye-tracking, mammalian cell culture, microscopy (fluorescence, confocal, SEM, TEM, AFM), spectroscopy (UV-Vis, fluorescence, AAS), genetic engineering tools (DNA isolation, cloning and expression, electrophoresis, PCR, transformation, SDS PAGE), basic biochemical and biophysical assays, HPLC, fabrication of microfluidic devices using PDMS
- Programming: C/C++, MATLAB, Python, LabVIEW
- Software: BESA Research 6.0, BESA Statistics 6.0, ImageJ, GraphPad Prism, OriginLab, SolidWorks

## OTHER AWARDS & EXPERIENCE

- Editorial Board Member, Insight, the official student media body of IIT Bombay, 2018 – 2019 ([flagship edition](#))
- Student Chair, Gender Sensitization Series, Gender Cell, IIT Bombay, Mar 2018 – Mar 2019
- Invited author, [Echoes 2.0](#), the annual literary magazine, IITB Litzkreig, Mar 2019
- Invited essayist, TeamWork Arts Pvt. Ltd., ZEE Jaipur Literature Festival (JLF), January 2018
- Co-founder, Spartans Association of Youth, a non-profit organization targeted at increasing the literacy rate in southern India, 2017
- Finalist, National Youth Poetry Slam (NYPS), Airplane Poetry Movement, Bangalore, in association with University of Illinois Chicago & College Unions Poetry Slam Invitational (CUPSI), September 2016
- Invited short fiction writer, [Terribly Tiny Tales](#), 2014 – 2015
- Creative director and invited contributor, The Anonymous Writer project, New Delhi, 2014 – 2016
- Grant Awardee, Book: *26 Jumpstraps: Twenty-six Thumb Rules of Entrepreneurial Bootstrapping*, published by FixNix Incorporation, 2014

## OTHER SKILLS

- Graduate in the Indian classical dance form of Kathak – certified by Anart Foundation, Centre for Cultural Resources and Training, Govt. of India, 2003 – 2011
- Languages
  - Native/Bilingual: Hindi, Bengali
  - Fluent: English
  - Conversant: Gujarati
  - Basic: Sanskrit, French, German