

## Curriculum Vitae

### Brijesh Modi

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#### Education

- 2018-Present                      Doctoral Candidate,  
   **Sapienza University of Rome**, Rome, Italy  
   (Ph.D project at European Brain Research Institute, Rome)
- 2012-2016                        Bachelor of Computer Engineering,  
   **University of Mumbai**, India  
   CGPI : 8.13 / 10
- 2010-2012                        Higher Secondary Certificate (H.S.C)  
   **Ramniranjan Jhunjhunwala College**, Mumbai  
   Physics - 90/100; Chemistry - 91/100; Mathematics - 95/100;  
   Computer Science - 178/200

#### Research Experience (Neuroscience)

##### European Brain Research Institute, Rome, Italy

*Research Fellow [Jan 2018 – Oct 2018];*

*Ph.D. Student [Nov 2018 – Present]*

*Supervisor: Dr. Enrico Cherubini & Dr. Marilena Griguoli*

Project: Role of hippocampal microcircuits in social memory and its alterations in animal models of autism.

- Prepared acute brain slices, performed patch clamping to study role of interneurons and pyramidal cells in CA2
- In-vivo experiments from anesthetized and awake head restrained mouse
- MATLAB scripts to analyze the data.
- PCR and Immunohistochemistry to assess genotype and cell types respectively.

##### Max Planck Institute for Brain Research, Frankfurt, Germany

*Research Intern [Sep 2016 - Aug 2017]*

*Supervisor: Dr. Hiroshi Ito*

Project: Role of retrosplenial cortex in spatial navigation.

- Built tetrode drive and performed surgery on rat for implantation.
- Trained rats and conducted electrophysiological recordings in freely behaving rats.
- Wrote Matlab scripts to analyse the data.
- Performed perfusion to extract brain and brain slicing to confirm implant locations
- Key findings: Presence of head direction, place, speed, movement direction, border signals existing either independently or in conjunction in rat's retrosplenial cortex.

## Work Experience (Computer Science)

### Nuclei Technologies, Mumbai, India

*Founder and C.E.O [Sep 2014 - May 2016]*

- Organized and conducted developer oriented workshops in PHP.
- Built and managed a team of 12 marketing Interns from multiple colleges

Product - **Cloud Concessions**. - An online portal that allows students to apply for railway concession. The first software of its kind is currently (as of Jan 2019) being used by more than 2000 students to get railway concession.

### Indian Statistical Institute, Kolkata, India

*Intern [Dec 2015 - Jan 2016]*

*Supervisor: Dr. Ashish Ghosh*

- Studied Multilayer Perceptron, Support Vector Machines, Radial Basis Functions and Committee machines.
- Studied and demonstrated the vanishing gradient problem

### Brown University

*Remote Intern [Dec 2015 - Jan 2016]*

*Supervisor: Dr. Omar Ahmed*

- Implemented Hodgkin Huxley models in both MATLAB and python.
- Studied the differences in response properties of distinct neuronal subtypes under different input regimes.

### OpenWorm Project

*Contributor [Jan 2016 - May 2016]*

*Supervisor: Dr. Stephen Larson*

Project : Muscle model repository

- Developed testing scripts in python
- My contributions in muscle\_model repository:  
[https://github.com/brijeshmodi12/muscle\\_model/](https://github.com/brijeshmodi12/muscle_model/)

### Tantra Gyan India Business Solutions, Dombivli, India

### *Software Engineering Intern [Jan 2014 - July 2014]*

- Developed an web applications using CodeIgniter Framework in PHP.
- Database Designer for various applications and projects undertaken by TG
- Developed the following two projects during my internship period -  
Virtual office [Enterprise Resource Plan]  
Online Test System.

### **Computer Society of India - VESIT**

#### *Junior Web Editor [Sep 2013 - Apr 2014]*

- Involved in designing the wireframes for the website of CSI-VESIT.
- Assisting in all events conducted by the council .The council conducted 23 events throughout the year.
- Conducted workshops on PHP/MySQL and PC Assembling
- Teaching Assistance in workshop on FLASH and .NET Framework.
- Participated in sponsorship drives to various locations in Mumbai to get sponsorship for events.
- Helping the council in the operational works for the events.

### **Vivekanand Seva Mandal, Dombivli, India [NGO]**

#### *Application Developer [May 2013 - May 2015]*

Project: Library Management System.

- Worked voluntarily for a Non-Governmental Organization for promoting computer education among students.
- Involved in developing application for an engineering library which is governed by Vivekanand Seva Mandal
- Conducted a workshop on LAN technologies and setting up of LAN for around 40 students.
- Project: Library Management System based on HTML, CSS, jQuery, AJAX, JavaScript, PHP and MySQL is now running in an Vivekanand's Engineering library. All the records of students, transactions, calculation of late fees, registering a new member etc in library is now managed on this Web application

### **Publications**

**Modi B\***, Pimpinella D\*, Pazienti A, Cherubini E, Griguoli M (2019) Possible implication of the CA2 hippocampal circuit in social cognition deficits observed in the neuroligin 3 knock-out mouse, a non-syndromic animal model of Autism. *Frontiers in Psychiatry (In Review)*

Amol T, **Brijesh M**, Shreya W, Priyasha G, Sujata K. Multi Document Text Summarization - A Survey [Accepted in Sapience 2016, an international IEEE conference on Data Mining and Advanced computing.]

### **Teaching Activities**

1. Conducted two workshops of duration 8 hours each on PHP and MySQL for Nuclei Technologies.
2. Conducted a workshop on Local Area Network (LAN) for 40 students during my service at Vivekanand Seva Mandal (NGO). Covered the basics of LAN and helped students to get the hands on experience of setting up a LAN in a building using networking devices.
3. I was selected to conduct a laboratory session on Web Technologies on the occasion of Teacher's day (5th Sept 2015).
4. Conducted workshop on PC Assembly and PHP/MySQL for Computer Society of India (CSI)- VESIT. I was also a Teaching Assistant during .Net Framework and Flash workshop conducted by CSI - Student Chapter VESIT.
5. Teaching Assistant during a workshop on JAVA and Android Programming organized by notemybook.com

## **Fellowships**

- EMBO – Short Term Fellowship ( Host PI : Dr. Francesco Battaglia ) [2019]
- European Brain Research Institute Fellowship, Rome, Italy [Jan 2018 - Dec 2019]
- Rajkorbhai Bhagwankala Trust, Mumbai, India [Year:- 2012 - 2015]
- Shri Goghari Dasha Shrimali Gnyati, Mumbai, India [Year:- 2012 - 2015]
- Shri Gohilwad Dasha Shrimali Vanik Mandal, Mumbai, India [Year:- 2012 - 2015]

## **Achievements**

- Finished in top 10 amongst 25000 in C and FOSS Python Competition by University of Mumbai.
- Secured Rank 301 in Codevita 2015 - a competitive coding competition organized by Tata Consultancy Services.
- 1st Runner Up at *Algorithms 1.0* intercollegiate hackathon organized by AIKTC - Programmers club.
- 1st Runner up in intra collegiate project presentation competition organized by ISTE- VESIT.
- 2nd Runner up in IoT 2015 - an intra collegiate poster presentation competition