

# Devdhar Patel

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## EDUCATION

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### University of Massachusetts - Amherst, MA

[Aug 2017 - *Expected* May 2019]

MS computer science (GPA : 3.8)

### VIT University - Vellore, India

[2011 - 2015]

Bachelor of Technology in computer science and engineering (GPA : 7.92/10)

Thesis: "Universal Low Cost Sensor Interface Using GSM Module Capable of IOT"

Advisors: **Prof. Senthil J** and **Dr. Maria Ekstrand** (Professor, University of California San Francisco)

## RESEARCH EXPERIENCE

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### Research assistant, BINDS Lab, University of Massachusetts Amherst

May, 2017 - present

Advisor: **Dr. Robert Kozma** (Visiting Professor, University of Massachusetts Amherst)

- Research focus on Reinforcement learning in Spiking neural networks and finding efficient biologically inspired learning rules.
- Involved in building a Python library for GPU-enabled Spiking neural network simulation.

### Tel-Me-Box: Validating and testing a novel, low-cost, real-time adherence monitoring device

June, 2014 - present

Advisor: **Dr. Maria Ekstrand** (Professor, University of California San Francisco)

- Design and Manufactured portable low cost adherence monitor devices for a research study.
- The NIH funded research study is being conducted by University of California, San Francisco at St. Johns Research Institute, Bangalore, India.
- More than 200 of these devices have been successfully deployed in remote areas.

### Creation Labs, VIT University

March, 2014 - May, 2015

Advisor: **Dr. V. Raju** (then Vice Chancellor, VIT University, Vellore)

- Core member of a student-driven multidisciplinary lab established to carry out research projects and develop disruptive technologies in many different fields. <http://creationlabs.in/>
- Worked on various projects including Open projects, Adherence monitor device, UDK game demo and smart clock.
- Managed the lab on a day to day basis in terms of technical guidance, acquiring resources and organizing events.
- Mentored and overlooked various projects. Some notable projects include : **Traffic dashboard**, a smart traffic monitoring platform that won the ACM big data challenge, **Mars rover** built for the European rover challenge and a **smart irrigation system**.

## PUBLICATIONS

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### BindsNET: A machine learning-oriented spiking neuralnetworks library in Python

Hananel Hazan, Daniel J. Saunders, Hassaan Khan, **Devdhar Patel**, Darpan T. Sanghavi,

Hava T. Siegelmann, and Robert Kozma

Frontiers in Neuroscience, 2019.

## PROFESSIONAL EXPERIENCE

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### GameChange Solutions, Dubai

January, 2016 - May, 2017

Software developer

- Helped develop a gamified performance management and planning module for the banking industry.

### Camel Port logistics, Mumbai

Software developer

January, 2015 - October, 2015

- designed and developed the platform for GPS tracking of vehicals via online portal.
- worked on developing the e-commerce website.

## KEY ACADEMIC PROJECTS

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### Visual Analysis of Conflict Networks (VAST 2008)

August, 2017 - December, 2017

- Build conflict networks from text data (wikipedia edits).
- Interactive visualization and analysis of the networks in Bokeh.

## Openprojects - Project Management system

February, 2015

- Openprojects is an innovative project management system for projects and ideas put forward by students.
- Worked the front-end and back-end developer for the project.

## Weebo - Child Tracking Device

August, 2014 - January, 2015

- Weebo is wearable location tracking device for children.
- Weebo was the finalist entry for Eureka! 2014, Asia's Largest Business Plan Competition, conducted by The Entrepreneurship Cell, IIT Bombay in the Business category.

## Travelling Salesman Problem (TSP) Solver

July, 2014 - December, 2014

- Genetic algorithm based TSP (Travelling Salesman Problem) solver
- <http://opeious.github.io/tsp.html>

## PROJECT REM - 3D Third Person Game

March, 2014 - September, 2014

- Project Rem is an unreal engine tech demo (third person puzzle game).
- Worked as the manager, programmer and material editor for this project.
- [www.devdharpatel.com/rem.html](http://www.devdharpatel.com/rem.html)

## Affordable Wireless Electrocardiogram (ECG) Monitor

August 2014

- An affordable wireless ECG (electrocardiogram) monitor designed to work in low resource conditions.
- CAMTech Uganda Hackathon Project

## Smart Digital Stethoscope

August 2014

- A smart stethoscope capable of diagnosing various heart illness via machine learning.
- CAMTech Uganda Hackathon Project

## TECHNICAL SKILLS

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**Machine learning frameworks:** PyTorch, Tensorflow, Scikit-Learn

**Programming:** C/C++, Java, Python, R programming, HTML5, CSS/SASS, PHP, Javascript, JQuery, MYSQL, CakePHP/Laravel, Lisp

**Other:** Game Development, Unreal Development Kit, Arduino, Intel Galileo, Raspberry Pi, 3D printing

## RELEVANT GRADUATE COURSEWORK

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- Reinforcement Learning
- Machine Learning
- Neural Networks
- Robotics
- Artificial Intelligence
- Visual Analytics
- Advanced Algorithms

## EXTRA – CURRICULAR

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- Volunteer at Sanshray, a NGO that focuses on the upliftment of conditions of the poor.  
<http://www.sanshray.org/>
- Active Sketchbook artist. Avid reader.  
<https://www.goodreads.com/user/show/5800061-devdhar-patel>
- Regular competitive coder and casual game programmer.  
<http://codepen.io/dee0512/>  
<https://github.com/dee0512>
- Embedded systems enthusiast and hacker with active instructables profile. Project featured on Instructables and adafruit blog.  
<http://www.instructables.com/member/Paranoid+Legend/>  
<https://blog.adafruit.com/2015/06/01/chronobot-a-clever-alarm-clock/>