

Devdhar Patel

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EDUCATION

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

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

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, 12 December 2018. doi: 10.3389/fninf.2018.00089

PROFESSIONAL EXPERIENCE

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

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

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

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

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

EXTRA – CURRICULAR

- 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/>