Amarendra Badugu

PhD Candidate
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Contact

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Languages

English, Telugu

Programming

Python, R, Java, VB, C++

Hardware

Arduino, Virtual reality

Software

MATLAB, FIJI/ImageJ
COMSOL, Meshlab,
Genomics tools,
Transcriptomics tools,
Blender, Gaming engines

Wetlab

Model based experimental design, *Drosophila* genetics, Mass organ isolation

Microscopy

Confocal, 2 Photon, Lightsheet, STED, TEM

Education

2012- **PhD candidate in Prof. Konrad Basler Lab** — IMLS, University of Zürich, Zürich
The goal of the project is to use systematic approaches to create tissue models in 3D using experimental data from the *drosophila* organs. The principles that are derived should be useful to create actual organs. The roles of the project involve designing, conducting experiments, analyzing/integrating image data, developing insilico models and identifying a step by step process to create an organ

2009–2012 **Master of science** — Royal institute of technology, Sweden
Specialization in computational and systems biology

2002–2006 **Bachelor of technology** — JNTU University college of Engineering (Autonomous), India
Specialization in electronics and communication engineering

Work experience

2006–2009 **Intergraph Consulting Pvt Ltd** — Hyderabad, India
Software analyst in Geospatial Intelligence Production Solution (GIPS) group
Involved in development and maintaince of four cartography products in GIPS suite.
Reported to senior manager **Sreenivasa Rao Majety**

Research experience

2011–2012 Lab of **Prof. Dagmar Iber** — D-BSSE, ETHZ, Switzerland
Research assistant
Developed *insilico* models of digit patterning during limb development in mouse

2011 Lab of **Prof. Jotun Hein** — Department of statistics, University of Oxford
Summer school student
Developed a single and multi-structure genetic algorithm for inverse folding of RNA

2010 Lab of **Prof. Ingemar Ernberg** — MTC, Karolinska Institute, Sweden
Semester student
Predicting ARID3a protein binding sites on Epstein BarrVirus (EBV) genome with **Prof. Erik Aurell, KTH**

2006 Lab of **Prof. K Padma Raju** — JNTU University college of Engineering (Autonomous), India
Shielding of electromagnetic radiation by metals

Interests

Epithelial tissue mechanics, 3D organ printing, 2D/3D tissue models, genetics, cell cycle tumor models, microscopy, image analysis, software design, big data image processing.

Publications

1. Badugu A et al, Digit patterning during limb development as a result of the BMP-receptor interaction. Sci Rep. 2012;2:991
2. Lyngsø et al, Multiple target inverse RNA folding. BMC Bioinformatics 2012;13:260

Teaching and organisational activities

2015-16 **Morphobiology forum** IMLS, University of Zürich, Zürich
Organised as part of an effort to facilitate communication between physicists, engineers and biologists

2012-16 **Scientific collaborations** Zürich, Basel
With various technology, microscopy, wetlab and modelling groups to bring in expertise for PhD project

2015 **Student supervision** IMLS, University of Zürich, Zürich
Two bachelors students for a project in the lab on cytoskeleton and hippo signaling

2013-14 **Course "Programming for biologists"** IMLS, University of Zürich, Zürich
Teaching assistant. Created a module to introduce controlling hardware with python. Built the module around Galileo microcontroller boards which were received from Intel

2009 **Technology transfer at Intergraph** Hyderabad, India
Produced detailed documentation for the software written at intergraph. Provided training and technology transfer to an internal employee

2008/09 **Training and supervision at Intergraph** Hyderabad, India
Trained 4 new employees in product development in the GIPS team. Supervised 2 new employees during feature cartographer product development

2005 **AEON-2005** India
Played a vital role in organising a national level technical symposium

2003/2006 **Multiple events** India
Volunteer work for ASIP-2k6 and RADIP-2K3 National Signal Processing Workshops.
Active participant in various volunteer activities for Diamond jubilee celebrations

Notable achievements

2015 **Hack Zurich 2015** Zurich
Created an app ”Rockmylight” that synchronizes light on screen with beats in a music sample. Can be used to synchronize large number of phones in a hall. One of the final 25 teams who did a live demo on stage

2013 **Intel Galileo donation program** IMLS, University of Zürich, Zürich
Received galileo microcontroller boards for teaching

2008 **Intergraph internal award** Hyderabad, India
For outstanding work done towards the first release of feature cartographer

2006 **Best business plan** India
Zeitgeist-2k6, a national level symposium

2002 **EAMCET, university entrance examination** India
Rank of 633 out of 149,850 engineering track examinees

2001 **State level mathematics Olympiad** India
Rank of 3 out of undisclosed number of participants

2000 **State level mathematics Olympiad** India
Rank of 5 out of undisclosed number of participants