

# Rishab Nayak

## *Curriculum Vitae*

### **Personal Details**

<b><i>Name</i></b>	Rishab Nayak
<b><i>Current</i></b>	Undergraduate, Boston University
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<b><i>Weblink</i></b>	<a href="http://www.linkedin.com/in/rishabnayak">www.linkedin.com/in/rishabnayak</a>
<b><i>Citizenship</i></b>	Indian / IN

## Education

**2017 – Present**

***B.A. Biochemistry and B.S. Biomedical Engineering***

Boston University, Boston, MA 02215

- GPA – 3.50
- Reinhard Lab – Enhanced Nano & Biosensors

**2015 – 2017**

***High School***

Delhi Public School, Bangalore South, Bangalore

- Student Coordinator (Grade 11,12)
- Recognized for "Outstanding Contribution in the Field of Science"

## Work Experience

**Jun 2017 to Present**

***Core Technology Development Team***

*Prantae Solutions*

- Developed a smartphone based diagnostic device for kidney health via urine albumin analysis
- Developed a plasmonic biosensor to quantitatively measure the microRNA biomarker for preeclampsia using PRET (Plasmon Resonance Energy Transfer)

**Sep 2017 to Present**

***Customer Service Representative***

*BU IT Help Center*

- Assisted the BU community by providing technical assistance on multiple BU Services including Authentication, E-Learning, Print and WiFi services.

**Jun 2018 to Jul 2018**

***Researcher***

*Wolfram Summer School*

- A Performance Analysis of Neural Networks to Identify Plugs and Connectors from an Image

**Apr 2017 to May 2017**

***Intern***

*KIIT Technology Business Incubator*

- Worked at the BioDesign Lab to create a low-cost phonocardiogram. Designed the Business Incubator website

**Apr 2015 to Apr 2017**

***Founder***

*DPS Got Science?*

- Founded the Science Club of my High School, organized an inter-school science fest - "STEAM - A celebration of ideas, research, and collaboration"

**Jul 2016 to Aug 2016**

***Director - Mentoring, Competitions & Events***

*Robotics for Youth*

- Designed curriculum for youth interested in pursuing robotics, did mentoring, readied students for competitions

**Apr 2016 to May 2016**

***Intern/Project Trainee***

*Stempeutics Research Pvt. Ltd.*

- Lab procedures for a BSL3 Lab, procedures for handling stem cells, sources and methods to isolate, grow, preserve, count, and analyze cell populations
- Operated flow cytometer, a PCR machine, and gel electrophoresis equipment
- Applied advanced techniques including induced cell differentiation, senescence assays, immunohistochemistry, and cDNA synthesis

## Projects

- A Novel Bioengineered Adenovirus to Reverse the Effects of Biological Aging by Replenishing Telomeres
- Esterifying Free Fatty Acids and Phospholipids in Algal Oil to Increase the Yield of BioDiesel from Feedstock
- Using Artificial Neural Networks and Machine Learning to convert lip movements to text using MATLAB
- Using advanced image processing algorithms to identify a plant disease from its image (Designed in MATLAB)
- Production of nanoparticle-based biosensors for quantification of microRNA
- ProFloU - a mobile based application to quantify the microalbumin levels in urine, an early marker of forthcoming kidney damage
- Computational Screening of compounds having specific binding to DNA-RNA hybrids, using Chimera, AutoDock and parts of Amber
- Ava - A personal healthcare assistant using voice recognition technology to enable better access to medical assistance
- An evaluation of the kinetics and rate of aquation of trans-dichlorobis(ethylenediamine) cobalt(III) chloride
- SurroundView - Provides the user contextual awareness, giving them audio feedback on the objects found in their surroundings
- CafeCam - Aids the visually impaired to find empty tables in restaurants and recognize known faces
- Designed a low-cost fully automated Pill Dispenser
- PlugID - A Performance Analysis of Neural Networks to Identify Plugs and Connectors from an Image

## Presentations

- Presenter – CBSE Science Fair - Regional Level, Bangalore, IN
- Keynote Presenter, STEAM 2016 – DPS Bangalore South, Bangalore, IN
- Presenter – IRIS National Science Fair – IIT – Delhi, New Delhi, IN
- Keynote Presenter, STEAM 2017 – DPS Bangalore South, Bangalore, IN
- Academic Conference – Boston University Chemistry Department, Boston, MA

## Skills

<b>Lab Skills</b>	Calibration of glassware/transfer pipettes, sample preparation (digestion, dehydration), lab safety procedures, solution preparation, calorimetry, titration, inorganic synthesis, freezing point depression
<b>Instrumentation</b>	Molecular spectroscopy (UV-Vis), atomic spectroscopy (FAAS, MP-AES), IR spectroscopy, flow cytometry, PCR, gel electrophoresis
<b>Programming</b>	Wolfram Language, MATLAB, C, C++, Java, Python, PHP, Swift, L <sup>A</sup> T <sub>E</sub> X
<b>Applications</b>	Linux, Molecular Dynamics Software, Microsoft Office Suite, Data Analysis Software
<b>Web</b>	HTML, CSS, JavaScript, and Related Web Technologies.
<b>Writing</b>	Scientific Writing Proficiency
<b>Other</b>	Black belt (1 <sup>st</sup> Dan), Electronic Keyboard (Grade 5, Trinity College of Music)

## Languages

<b>Native</b>	<b>English</b>
<b>Fluent</b>	<b>Hindi, Oriya</b>
<b>Basic</b>	<b>Sanskrit</b>

## References

***Academic***

***Prof. Binyomin Abrams***

Senior Lecturer, Boston University  
[people.bu.edu/abramsb/](http://people.bu.edu/abramsb/)

***Professional***

***Prof. Aseem Mishra***

CEO, Prantae Solutions Limited