Rishab Nayak

Curriculum Vitae

Personal Details

Name	Rishab Nayak
Current	Undergraduate, Boston University
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Citizenship	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

Aug 2018 to Present ***Student Ambassador***
Wolfram

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 ***Information Technology Specialist***
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

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

Languages

Native	***English***
Fluent	***Hindi, Oriya***
Basic	***Sanskrit***

References

Academic	***Prof. Binyomin Abrams*** Senior Lecturer, Boston University people.bu.edu/abramsb/
Professional	***Prof. Aseem Mishra*** CEO, Prantae Solutions Limited