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
Reinhard Lab – Enhanced Nano & Biosensors
Winner at HackNYU - Healthcare Track
Evaluation of the aquation of *trans*-dichlorobis(ethylenediamine) cobalt(III) chloride
Designed a low-cost fully automated Pill Dispenser
A Performance Analysis of Neural Networks to Identify Plugs and Connectors from an Image

2015 – 2017

High School
Delhi Public School, Bangalore South, Bangalore
Student Coordinator (Grade 11,12)
National Finalist at Intel IRIS, Aerolympics, Spell Bee - India
Recognized for "Outstanding Contribution in the Field of Science"

Work Experience

Sept 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 2017 to Present

Core Technology Development Team
Prantae Solutions
- Developed a smartphone based self-health monitoring device for kidney health through urine albumin analysis
- Developed a plasmonic biosensor to quantitatively measure the microRNA biomarker for preeclampsia using PRET (Plasmon Resonance Energy Transfer)

Apr 2015 to Present

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”

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

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
- Developed 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 - voice recognition technology to enable better access to medical assistance
- Evaluation of the aquation of *trans*-dichlorobis(ethylenediamine) cobalt(III) chloride
- ProteinCam - for use with proprietary hardware to detect protein concentration from body fluid
- SurroundView - get audio feedback on the objects found in your surroundings
- CafeCam - aids the visually impaired to better understand the world around them
- Evaluation of the aquation of *trans*-dichlorobis(ethylenediamine) cobalt(III) chloride
- Designed a low-cost fully automated Pill Dispenser
- 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
Computer Languages	Mathematica, 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, Karate; electronic keyboard (Grade 5, Trinity College of Music); Volunteer, Schneider Electric; Volunteer, CMCA

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