

Siddhant Shrivastava

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<http://siddhantsci.org>

Education

- **Birla Institute of Technology and Science Pilani** Pilani, India
B.E. (Hons.) in Computer Science Aug. 2012 – Present
 - **Key Courses:** Pervasive Computing, Design Project (ICT-Enabled Wearables), Laboratory Project (Multi-Robot Terrain Exploration), Study Project (Distributed Robotics), Artificial Intelligence, Information Retrieval, Machine Learning, Network Programming, Robotics, Number Theory, Algorithms, Operating Systems, Programming Languages, Compiler Design, Logic, Computer Architecture, Linear Algebra, Calculus, Differential Equations
- **St. Joseph's Academy** Dehradun, India
Council for the Indian School Certificate Examinations **I.S.C:** 94.75 **I.C.S.E:** 93.2 2001 – 2012
 - **Key Courses:** Computer Science, Mathematics, Physics, Chemistry, History, Geography, English, Sanskrit, Environmental Education, Life Skills, Art, Music

Development / Design / Research Experience

- **Google Summer of Code 2015** Python Software Foundation
Italian Mars Society - ERAS Project May 2015 – Aug 2015
 - Developed a distributed **Virtual-Reality based Telerobotics** application to be used in manned Mars missions. Links: Source Code, Docker Image, Documentation, Dev Blog
 - Technologies used: Python, Robot Operating System, Tango-Controls SCADA system, Blender Game Engine, FFmpeg, Docker, Oculus Rift, Minoru 3D camera, OpenVPN
- **MIT Media Lab Design Innovation Workshop** Ahmedabad, India
Smart Textiles - Computer Scientist Jan 2015
 - Worked in a cross-disciplinary team to *design and prototype* a **soft sensor system** for a smart carpet using Arduino (UNO, LilyPad), Adafruit NeoPixel Flora, Soft Electronics elements
 - Learned the principles of Design, methods for rapid prototyping, and multi-disciplinary integration of Technology and Design
- **Wearable, Pervasive, and Networking Lab** BITS Pilani
Undergraduate Researcher for BITS LifeGuard Aug 2014 - Present
 - Designing a wearable life-saving solution for vehicular drivers based on physiological signals satisfying real-time, power-efficient, fault-tolerant wireless sensor fusion using the Shimmer Sensor platform, Raspberry Pi, Arduino(Sleepy Pi), and Bluetooth network programming.
- **Indian Space Research Organization** Dehradun, India
Indian Institute of Remote Sensing May 2014 – July 2014
 - Developed an Open-Source Image Processing and Classification software in Python with a team of 10 students and scientists. Technologies used: GDAL (Geospatial Data Abstraction Library), scipy, scikit-learn, OpenCV, tkinter, matplotlib, Python Imaging Library
- **Embedded Systems and Robotics Lab** BITS Pilani
Undergraduate Researcher Aug 2013 – Present
 - Research, simulation, and prototyping of Distributed Robotics algorithms for efficient Terrain exploration
- **GUEye** BITS Pilani
APOGEE Jan 2015 – Apr 2015
 - PyGame, OpenCV, Selenium, and AutoPy based implementation enabling a hands-free Natural User Interface for reading e-books, navigation, and games. Extended to code-editing using Leap Motion.
- **Design of scalable Chat Servers** BITS Pilani
Network Programming Course Project Sep 2014 – Dec 2014
 - Designed Prethreaded and Event-driven concurrent chat servers for use by Telnet clients.

Teaching / Management / Volunteering Experience

- **Teaching Assistant** Pilani, India
BITS Pilani Jan 2015 – April 2015
 - **CS F303 Computer Networks:** *Conducted lab sessions for the 198 students enrolled in the course.*
Responsible for teaching tools like Wireshark, NetSim; Linux concepts; and Network Programming
- **Editorial Team Head and Core Team Member** Pilani, India
BITS Embryo Aug 2012 - Present
 - Editorial Head for the sci-tech campus newsletter Aurora (Readership: 3000 students).
 - Conducted 40+ talks through Telepresence and video-conferencing with *BITSConnect 2.0 integration*
 - Coordinated APOGEE Innovation Challenge and Alumni Research Talks
 - Created two Publicity Videos for screening in the BITS Auditorium
- **Co-founder and Technical Head** Pilani, India
BITS Firefox Community Jan 2015 – April 2015
 - Spearheaded first-of-their-kind Linux Install Fests and FOSS talks for 1000+ BITS Pilani students.

Papers / Presentations

- **Data Storage in DNA**
International Journal of Electrical Energy June 2013
 - Presented a review of techniques architected for digital data storage in the physical medium of DNA
- **Incoming Phone Call Priority**
Presented in APOGEE (sponsored by Springer and IEEE) March 2014
 - Architected methods to implement client priority based routing of mobile telecommunication across different layers of the networking stack

Achievements & Awards

- **Touchtyping:** 99th percentile in the world in touchtyping with an average typing speed of nearly 110 Words per minute on Typeracer and Keyhero
- **Competitive Examinations:** Scored 370/450 in BITSAT 2012; All India Rank 4984 in IIT-JEE 2012; All India Rank 1523 (out of 1.2 million students) in AIEEE 2012
- **Academic Excellence Award** by the *Association of Scientific and Technical Officers* for stellar performance in I.S.C examinations

Skills

- **Languages:** Python, C/C++, Java, Assembly, R, \LaTeX , Bash, HTML, CSS, Matlab
- **Operating Systems:** Linux, Windows, MacOS, Android
- **Embedded Systems:** Arduino, Raspberry Pi, TinyOS, Shimmer Sensor platform
- **Version Control:** Git, Mercurial, Docker
- **Multimedia:** FFmpeg, Adobe Photoshop, After Effects, Premier Pro, Flash, Audacity
- **Robotics:** Robot Operating System (ROS) , Blender Game Engine, Gazebo
- **Presentation:** GNU TeXMacS, \LaTeX Beamer, impress.js, reveal.js, Microsoft Office
- **Networking:** Sockets API, Wireshark, NetSim, OMNET++, BlueZ Stack, OpenVPN
- **SCADA Systems / other Libraries:** Tango-Controls, matplotlib, Scientific Python