

# Sandeepan Sengupta

## Résumé

+91 (7278) 5939 64  
mail@sandeepan.info  
www.sandeepan.info  
SandeepanSengupta  
sandeepan-sengupta

### Education

- 2013 – 2018 **Dual B.Tech - M.Tech in Electronics and Communication Engineering**, Techno India University, Cumulative GPA 8.89.
- 2011 **Higher Secondary Education (12<sup>th</sup> Standard)**, Bidhannagar Government High School, West Bengal Council of Higher Secondary Education, 80.5%.
- 2009 **Secondary Education (10<sup>th</sup> Standard)**, Bidhannagar Government High School, West Bengal Board of Secondary Education, 84.875%.

### Publications

#### Conference

Sandeepan Sengupta and Buddhadev Pradhan.  
Chaotic-Cipher Based Memory Efficient Symmetric Key Cryptosystem. In *EDCT*. IEEE, 2018.

Tamojit Saha, Sandeepan Sengupta and Tanmoy Dasgupta.  
Chaotic Cipher Based Spatial Domain Steganography with Strong Resistance Against Statistical Attacks. In *ICRCICN*, page 365 to 370. IEEE, 2017.

### Projects

- 2018 **ChaosCrypt**.  
Symmetric key cryptography for microcontroller based on chaotic attractor
- 2018 **miniDAC**, *Open Source*.  
Unipolar digital to analog converter (DAC) module for Arduino™ built around LTC®2633
- 2017 **ChaosKit**, *Open Source*.  
Steganography toolkit developed using Python and OpenCV implementing multiscroll attractor and mathematical morphology
- 2017 **HelioHarvester**.  
Smart low-cost portable solar lamp with user-aware embedded power management
- 2017 **SafeLink**.  
Authentication scheme for microcontrollers with features like encryption, intrusion detection and lockdown timer
- 2016 **SyncLED**, *Open Source*.  
PC accessory to control cabinet fans and RGB LED with features like automatic fan type detection, synchronizing LEDs with system temperature using Windows application etc.
- 2015 **LumiNode**, *Open Source*.  
Bluetooth controlled RGB LED system that can be operated using Android application

### Engineering and Computer skills

Languages	C, Python, Arduino, X86 and AVR Assembly	Additional	LaTeX, HTML, CSS, Java, C++, C#, SQL, PL/SQL
Design Tools	Eagle CAD, SketchUp, Xilinx ISE	Simulation	MATLAB, SciLab, SPICE
General	Document Editors, Spreadsheets, Slide Presentations, Photo Edit	Others	PCB Fabrication, Soldering, Electrical Testing, Web Design

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## Experience

### Work

2018 **Associate System Engineer**, IBM India.

### Research

2017 **Academic Research on Security.**

Worked on applications of chaotic cipher leading to **two IEEE conference** papers

2016 **Industry Oriented Academic Research.**

Designed and developed embedded controller module for portable solar-powered devices

### Teaching

2015 – 2017 **Project Mentor.**

Mentored undergraduate students of regional engineering universities for projects

2015 **Freelance Tutor.**

Freelancing as Mathematics and Physics tutor (for high school students)

2014 **Teaching in Open School.**

Worked with a non-profit organization to teach in open school for street children

### Industry

2016 **Vocational Training in Indian Railways.**

Participated in a vocational training program on communication in Test Control Center, Indian Railways, Howrah Division

2013 – 2016 **Industry Visit at Power Plants.**

Visited control system facilities of power plants run by West Bengal Power Development Corporation Limited

### Managerial

2016 **Organizing Technology Convention.**

Organized the first inter-university technology convention (*Vivarta*) of our university

2014 **Organizing Art Convention.**

Organized the first art convention (*Spectrum*) of our university

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## Languages

Bengali Native proficiency  
English Full professional proficiency  
Hindi Limited working proficiency

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## Achievements and Awards

Best Project National Science Day Exhibition 2016, Science Association of Bengal  
Runner Up *Electronically Yours* (On-spot electronic design contest), *Edge X 2016* Technology Convention, Techno India College, Salt-Lake (TISL)  
Champion *Electronically Yours* (On-spot electronic design contest), *Edge 2015* Technology Convention, Techno India College, Salt-Lake (TISL)

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## Others

- Developed *libraries* for arduino community driven projects
- Delivered seminars in regional engineering universities on open source hardware
- Acted as trainer for undergraduate students in regional engineering universities for open source hardware design, development and applications
- Took up multiple personal projects on embedded system design and development