

Kunal Baweja

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Education

- Columbia University in the City of New York, USA** Expected Dec 2017
MS in Computer Science, GPA: 4.0/4.0
- Birla Institute of Technology & Science, Pilani K.K. Birla Goa Campus, India** Aug 2011 - May 2015
B.E.(Hons.) in Computer Science, GPA: 7.49/10

Professional Experience

- Developer Intern, 1010 Data Inc** June 2017 - Aug 2017
- File caching on ephemeral local disk from a public cloud based persistent data storage.
- Digital Centers Teaching Internship, Columbia University** Sept 2016 - Present
- Weekly Python programming lectures and workshops, open to everyone.
- Research Internship at TSUNAMi Center, National University of Singapore** June 2015 - May 2016
- Web and systems security, applied cryptography and distributed systems.
- Summer Internship at Bentley Systems Inc., India** May 2014 - July 2014
- Prototype and REST API development for *Bentley Connect Interoperability Services*
- Summer Internship at Bharat Heavy Electricals Limited, India** May 2013 - July 2013
- Software Development for *BHEL Online Meeting Management System*

Projects

- Coverage Based Fault Injection Fuzzing** Jan 2017 - May 2017
- Detects security vulnerabilities caused by errors in execution environment of a program.
- Github: <https://github.com/akshaynagpal/cbfi>
- Frame-Seller: Simple demo for an e-commerce platform** Jan 2017 - Apr 2017
- Extensively used AWS for API development as a course project.
- Github: <https://github.com/bawejakunal/Frame-Seller>
- Sigma Learn - Class Room Lectures to Student Notes [Columbia ADI Hackathon]** Jan 2017
- Converts classroom lectures to text transcripts and summary in realtime.
- Weblink: <https://devpost.com/software/sigma-learn>
- ParkWizard - Real Time Street Parking Information** Dec 2016
- Android application to search and crowdsource information of street parking locations
- Github: <https://github.com/sas2387/ParkWizard>
- A Secure Sharding Protocol for Open Blockchains [Accepted: ACM CCS-2016]** Oct 2016
- Weblink: <http://dl.acm.org/citation.cfm?doid=2976749.2978389>
- Authors: Loi Luu, Viswesh Narayanan, Chaodong Zheng, Kunal Baweja, Seth Gilbert, Prateek Saxena
- WeShare: A Coercion Resistant and Scalable Storage Cloud** Jun 2015 - Aug 2015
- A Google Chrome Extension to securely share files over cloud storage services.
- Github: <https://github.com/bawejakunal/MyCrest>
- A Vnode Level Stackable Encrypted Filesystem** March 2015
- Implemented a local vnode level stackable encrypted filesystem using [Wrapfs](#) as a base.
- Github: <https://github.com/bawejakunal/wrapfs-aes>
- Intercepting Kernel System Calls** Jan 2015
- Loadable Kernel Module to intercept the open() system call in Linux (self learning project)
- Github: <https://github.com/bawejakunal/Intercept-System-Calls>
- Generalised Vector Space Model** Nov 2014
- Document ranking using GVSM, done as a course project for Information Retrieval Course.
- Github: <https://github.com/bawejakunal/Generalised-Vector-Space-Model>
- Predicting Telemarketing Call Patterns** Oct 2014
- C4.5 decision tree algorithm implemented on hadoop framework to predict the marketing call patterns of a bank offering loans.

11. **Bentley Connect Interoperability Services (BCIS)** May 2014 - July 2014
 - Developed REST API endpoints and prototypes for BCIS to synchronize data and services among various stakeholders of an infrastructure development project.
12. **Symmetric Parallel Computing Cluster for Matrix Multiplication** April 2014
 - Implemented a Beowulf Cluster with 4 nodes to compute product of matrices as a course project.
 - Note: Although we achieved fault tolerance for nodes, the system lacked in scalability goals.
13. **BHEL Online Meeting Management System** May 2013 - Jul 2013
 - Salient Features: email reminders, calendar updates, file uploads, employee name search
 - Demo Presentation: <https://goo.gl/2g8aAo>
14. **8-Way Set Associative Cache with FIFO Replacement and Write Back Policy** Oct 2013
 - A Verilog implementation of cache as part of the undergraduate subject on Computer Architecture.
 - Github: <https://github.com/bawejakunal/Set-Associative-Cache>

Teaching Experience

- **Course Assistant, Introduction to Programming with Python, Columbia University** Feb 2017 - May 2017
 - Organized office hours for students and evaluated course assignments.
- **Teaching Assistant for Data Structures and Algorithms (BITS Pilani Goa Campus)** Jan 2015 - Apr 2015
 - The course was conducted for undergraduate students by [Mr. Ramprasad Joshi](#).
- **Teaching Assistant for Object Oriented Programming (BITS Pilani Goa Campus)** Aug 2014 - Nov 2014
 - The course was conducted for undergraduate students by [Mr. TSRK Prasad](#).
- **Teaching Assistant for Advanced Computer Organisation (BITS Pilani Goa Campus)** Jan 2014 - Apr 2014
 - The course was conducted for undergraduate students by [Dr. Lucy J. Gudino](#).
- **Teaching Assistant for Computer Programming (BITS Pilani Goa Campus)** Jan 2014 - Apr 2014
 - The course was conducted for undergraduate students by [Dr. Biju K. Raveendran](#).

Certifications, Electives & Technical Skills

- **Coursera.org Certifications**
 - Python For Everybody by University of Michigan (5 course specialization) [\[Certificate Link\]](#)
 - Machine Learning Foundations: A Case Study Approach by University of Washington [\[Certificate Link\]](#)
- **Technical Skills**
 - C, Java, Python, K(vector programming), JavaScript, Java Server Pages(JSP), SQL, HTML5, CSS3, MVC Frameworks, Django, AWS

Achievements

- **Selected as a delegate to HPAIR 2016 Harvard Conference** Feb 2016
 - Selected as a delegate to **Entrepreneurship Panel of Harvard Project on Asian and International Relations Conference 2016**, Harvard 2016.
- **Selected as a delegate to HPAIR 2014 Conference, Tokyo** Aug 2014
 - Selected as a delegate to **Technology Panel of Harvard Project on Asian and International Relations Conference 2014**, Tokyo.
- **Among Top 10% students in National Standard Examination in Physics Regional Round** 2010, 2011
 - NSEP is organised every year by **Indian Association of Physics Teachers(IAPT)** as part of selection process for **International Physics Olympiad**.
- **Academic Excellence Scholarship in High School** 2009-2011
 - Awarded 75% scholarship at The Emerald Heights International School for consecutively two academic years.

Extracurricular Activities

- **Photography Club Co-ordinator, BITS Pilani K.K. Birla Goa Campus** 2013 - 2014
 - Photography enthusiast and active member of the students' photography club on campus.
- **Member, Department of Finance & Assets Management, BITS Pilani K.K. Birla Goa Campus** 2011 - 2013
 - Active member of Department of Finance & Assets Management, which regulates the finances of student bodies on campus.
- Swimming, Table Tennis