Kunal Baweja

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Professional Experience

- **Staff Software Engineer, Twitter Inc. (Tech Lead, Notifications Product Engineering)**   Feb 2018 - Present
  - Building infrastructure for realtime news notifications, reminders, recommended notifications etc.
  - A/B testing product surface and content relevance changes for notifications sent out to customers
  - Setting up team's technical strategy and project prioritizations
  - Experiment & Technical design shepherd for product and infra changes across tech stack
  - Collaborating with PM, Data Science & Design on Notifications product strategy for user growth and retention
  - Mentoring engineers on the org towards technical skills and career growth

- **Software Development Intern, Max2 Inc (Internet Edge Services)**   Sept 2017 - Dec 2017
  - Developing microservices and applications for edge computing servers processing sensor readings from connected IoT devices.

- **Developer Intern, 1010data Inc (Systems Development Team)**   Jun 2017 - Aug 2017
  - Developed cache prototype for storing database files on local disks from persistent public cloud storage. It enables on demand computational resource provisioning in cloud.

- **Research Intern at TSUNAMi Center, National University of Singapore**   Jun 2015 - May 2016
  - Developed and tested prototypes for research projects on secure filesystems, scaling blockchain transaction rates and defending data oriented attacks in linux kernel.
  - Implemented File Inclusion, SQL Injection and XSS tests for a web vulnerability scanner.

- **Software Developer Intern, Bentley Systems Inc., India**   May 2014 - Jul 2014
  - Developed item stock comparison for *Bentley Connect Interoperability Services* API to syncrhonize data among stakeholders and vendors for infrastructure projects.

Education

- **Columbia University in the City of New York, USA**   Sept 2016 - Dec 2017
  MS in Computer Science
- **Birla Institute of Technology & Science, Pilani K.K. Birla Goa Campus, India**   Aug 2011 - May 2015
  B.E.(Hons.) in Computer Science

Selected Projects

1. **Hello World: Messaging sans language barriers** [https://devpost.com/software/hello-world-5v89re]   Sept 2017
   - Developed backend on Google Cloud Platform using Firebase Realtime Database for syncing messages across devices and Text translation API for translating message to receiver's language.

2. **Coverage Based Fault Injection Fuzzing** [https://github.com/akshaynagpal/cbfi]   Jan 2017 - May 2017
   - Detects security vulnerabilities caused by errors in execution environment of a program by simulating and permuting system call failures and analyzing program response/crash.

3. **Frame-Seller** [https://github.com/bawejakunal/Frame-Seller]   Jan 2017 - Apr 2017
   - Cloud based application for selling photographs. Developed and deployed using AWS API Gateway, AWS Lambda, SQS, SNS, Cloudwatch, Swagger and static frontend hosted on AWS S3.
   - Microservices implemented: email verification, asynchronous order processing and Stripe payments.

4. **Sigma Learn - Lecture to Notes** [https://github.com/bawejakunal/Sigma-Learn]   Jan 2017
   - Converts audio lectures to transcripts and summary in realtime using IBM Watson and Aylien APIs.
   - It can be helpful for students with hearing impairments and/or other physical disabilities.

5. **A Secure Sharding Protocol for Open Blockchains [Accepted: ACM CCS-2016]**   Oct 2016
   - A distributed agreement protocol for committee based blockchains and scaling transaction rates.
   - Weblink: http://dl.acm.org/citation.cfm?doid=2976749.2978389

Certifications & Technical Skills

- **Coursera.org Certifications**
  - Python For Everybody by University of Michigan (5 course specialization) [Certificate Link]
  - Machine Learning Foundations by University of Washington [Certificate Link]

- **Technical Skills**
  - Scala, Java, Python, Go, C/C++, JavaScript, HTML, CSS
  - Mesos, Hadoop, AWS, Google Cloud Platform, Docker, Distributed Systems, Microservices, SQL/NoSQL