Kunal Baweja

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Professional Experience

- **Founding Software Engineer, Hexus AI Corp.**   Apr 2024 - Present
  - Developing backend platform and infra for AI enabled product tours, documentation and analytics for GTM teams.

- **Co-founder & CTO, justwords.ai (Choice AI Inc.)**   Jan 2024 - Mar 2024
  - Developed the AI tech stack and platform for personalized messaging for marketing content.

- **Staff Software Engineer, Reddit Inc. (Chat Discovery & Distribution)**   May 2023 - Jan 2024
  - Developing Community Chat Recommendations for home feed, chat tab & discover tab.
  - Collaborating with product, data science and engineering teams to drive team's roadmap, strategy and engineering planning.

- **Staff Software Engineer, Twitter Inc. (Tech Lead, Notifications Product Engineering)**   Feb 2018 - May 2023
  - Product and infra engineering for recommended content, reminders and messaging notifications.
  - A/B testing product and relevance changes for notifications sent out to customers.
  - Lead technical strategy and project prioritizations focusing on growth and retention of Twitter users.
  - Experiment & Technical design shepherd for product and infra changes across tech stack.
  - Collaborated with PM, Data Science, Design & Legal on Notifications product strategy.
  - Mentored 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, 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 - Apr 2017
  - 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*

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

Publications & Projects

1. **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

2. **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

3. **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

4. **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

5. **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

6. **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

7. **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

8. **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

9. **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

10. **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**
  - Scala, Java, Python, Go, C/C++, GraphQL, Hadoop, JavaScript, HTML, CSS, SQL/NoSQL, AI/ML
  - AWS, Google Cloud Platform (GCP), Azure, Docker, Distributed Systems, Microservices

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 Mangement, 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