

# Dhruv Kumar

https://dkumar.me

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## EDUCATION

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- **University at Buffalo**

*B.S. in Computer Science; GPA: 3.5*

*Aug. 2014 – May. 2018*

## SKILLS

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- **Proficient:** Python, Java, C++.
- **Familiar:** C, SML, Scala, Haskell, Swift, Javascript, MongoDB, HTML, CSS, git.

## EXPERIENCE

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- **University at Buffalo**

*Teaching Assistant for Algorithm Design, Data Structures, Discrete Mathematics, and IoT* *June 2017 - May 2018*

- Constructed template and grader scripts for programming assignments in Java, Python, and C++.
- Taught recitations, held office hours, made walk through videos, and graded assignments.

- **University at Buffalo**

*Resident Advisor*

*August 2015 - May 2017*

- Promoted academic excellence, addressed student needs, and encouraged involvement among residents in a way that supported the mission of the University, the Department of Housing, and Residence Life.
- Marketed/Developed/Led student centered hall programs to promote social, education, diversity, health, emotional, understanding, and growth.

- **University at Buffalo**

*Research Assistant*

*May 2016 - December 2016*

- Implemented GC benchmarks in Scala and Haskell with multithreading capabilities.
- Led a team of five people to generate test suite for a SML compiler.

## PROJECTS

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- **UB Grader:**

- Developed a course management service which allows for automatic grading of programming assignments, to be used by 4,000-5,000 students of University at Buffalo's CS Department.
- Added CRUD functionality for submissions and integrated Tango, an open source standalone RESTful Web service that runs and manages autograded jobs.

- **HackOS:**

- Implemented an OS to support user level programs without any memory leaks.
- Synchronization primitives: mutex locks, semaphores, conditional variables, and reader/writer locks.
- File System Calls and Process Support: open, read, write, lseek, close, dup2, chdir, getcwd, getpid, fork, execv, and waitpid.
- Virtual Memory: address translation, TLB management, page replacement, and swapping.

- **Amazon Dynamo:**

- Built a simple Amazon Dynamo style key-value storage system using chain replication.
- Implemented a failure handling protocol to handle concurrent operations with concurrent failures.

## ACHIEVEMENTS

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- Deans List: Fall and Spring 2014/2015
- Mentor for Intercultural leadership Retreat
- Torch Leadership Certificate
- Peak Leadership Certificate