# Binhan Xu | Resume

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## Education

**University of California, Santa Barbara(UCSB)** — **Goleta, CA**
*Department of Computer Science* — *2015.09–present*
2nd year Master Student in Computer Science
GPA: 3.74/4.0
Courses: Scalable Internet Services, Augmented Reality, Database Management System, Smartphone-centric Application Development, Runtime System, Advanced Distributed System, Advanced Computer Vision

**University of Electronic Science & Technology of China(UESTC)** — **Chengdu, China**
*School of Electronic Engineering* — *2011.09-2015.07*
Bachelor of Engineering in Electronic Information Engineering
GPA: 91.8/100, Major Rank: 1/358, **Scholarship: National Scholarship in 2012 & 2014**

## Programming Skills

**Proficient in:** C++, JAVA, Python, OpenCV, OpenGL, MATLAB
**Frequent use:** Ruby on Rails, Android, HTML5, Bash, Git

## Projects

**Distributed System Implementation based on RAFT protocol (Python)** — **Goleta, CA**
*UCSB* — *2016.03–2016.06*
- Developed system architecture consisting of multiple datacenters and requesting clients.
- Wrote Python code to implement RAFT consensus algorithm as data management protocol to ensure correctness of log propagation across datacenters.
- Implemented leader, candidate and follower modules and their respective duties during RAFT process.

**3D AR Tetris Game (Vuforia, Android, OpenGL)** — **Goleta, CA**
*UCSB* — *2015.09–2015.12*
An interactive **Android** Tetris Game using Augmented Reality technology.
- Implemented the backend logic of 3D AR Tetris Game using OOP framework.
- Achieved marker-based manipulation to enable AR control of tetris movement.
- Wrote code to achieve critical functions and modules, including angle detection, border detection and coordinate system transition.

**ProductGrabber (Ruby on Rails)** — **Goleta, CA**
*UCSB* — *2015.09–2015.12*
A web service featuring 100k-product catalog and product attribute comparison functionality.
- Developed features about product preferences, product comparison and product recommendation.
- Conducted vertical Tsung tests on AWS to test scalability of our web services.

## Research

**Video stabilization using hybrid approach (C++, MATLAB)** — **Chengdu, China & Beijing, China**
*Image & Video Processing Laboratory, UESTC & **Microsoft Research Asia*** — *2014.09–2015.05*
Achievement: Improved current approaches in video stabilization. Specifically tackled on videos with near-range content.
- Improved state-of-the-art video stabilization approach by employing infinite-tomography motion model to reduce content distortion when stabilizing near-range video clips.
- Developed adaptive hybrid motion estimation model to associate model selection with video content.

**Multiple video mosaicking (C++, MATLAB)** — **Chengdu, China**
*Image & Video Processing Laboratory, UESTC* — *2014.09–2015.05*
Achievement: Able to stitch multiple video clips with overlapping content together to render a larger view.
- Developed the processing framework based on bundle-path motion estimation model (currently only used in video stabilization).
- Granted **Central University Research Funds**.

## Publication

*A Hybrid Approach for Near-Range Video Stabilization*
Shuaicheng Liu, **Binhan Xu**, Chuang Deng, Shuyuan Zhu, Bing Zeng, Moncef Gabbouj.
IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2016