Email: rsingla92@gmail.com **Phone**: 1-778-926-9475
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Rohit Singla

TECHNICAL SKILLS

Languages	Development Tools	Other Technical	Non-Technical
C/C++	OpenCV & OpenGL	Augmented reality & computer vision	Hard working and quick learner
MATLAB & Python	Git & Subversion	Surgical navigation & robotics	Strong and adaptive problem-solving skills
Java	Windows, Linux, Android	Camera/projector calibration	Excellent organizational & analytical skills
PostgreSQL/PostGIS	Visual Studio 2008 – 2015	Medical image processing	Market analysis & business development

WORK EXPERIENCE

Graduate Research Assistant. (UBC Robotics and Control Lab) Sep 2015 – Present
Project lead on an augmented reality system for kidney cancer surgery, achieving a ~50% improvement of clinical measures in mock surgeries and receiving 2 best paper awards
Developed software modules for a Windows desktop application in C++ using OpenGL and OpenCV.

Graduate Teaching Assistant. (Dept. of Electrical and Computer Engineering) Sep 2016 – Dec 2016
Mentored students in several technical topics including: medical imaging, point-based and intensity-based registration, error estimation, surgical robotics, and forward/inverse kinematics.

Software Development Intern. (Safe Software Inc.) May – Aug 2013, May – Aug 2015
Implemented a re-design of C++ modules interfacing with databases to drastically improve user experience. Formats include PostgreSQL, PostGIS, Amazon Redshift, Oracle Object-Relational, and Oracle Spatial.
Developed front-end and back-end work according to a design specification and increased test coverage by 15%.

Undergraduate Research Assistant. (UBC Robotics and Control Lab) Jan 2014 – May 2015
Worked on Android-based 3D ultrasound needle guidance using accelerometer and gyroscope for tracking
Implemented several MATLAB scripts and C++ programs to perform computer visions tasks including stereo correspondence, image de-noising filters, feature detection and tracking and camera calibration.

EDUCATION

MASc in Biomedical Engineering (University of British Columbia) Sep 2015 – Jul 2017
Thesis: Intra-operative Ultrasound-based Augmented Reality for Laparoscopic Surgical Guidance
Supervision by Prof. Robert Rohling. Enrolled in Engineers in Scrubs, a medical innovation program.

BASc in Computer Engineering, Software Option (University of British Columbia) Sep 2010 – May 2015
Graduated with Distinction & Completion of the Co-operative Education program. Ranked top 5 in the Dept.

TECHNICAL PROJECTS

Patient Shivering Analysis. Sept 2017
Created MATLAB scripts to process, sanitize and analyze iPhone accelerometer data from shivering patients.
Performed statistical analysis on collected data to assess inter-patient variability and correlation with patient and physician measures on shivering severity.

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Portable Video Goggles. Jan 2016 – Dec 2016
Designed and developed a video device using the Raspberry Pi and Python for patients to remotely record diagnostic information during vertigo attacks.
Implemented a single-button state machine to initiate, record, save, and shutdown for operational ease.
Performed problem identification and requirements elicitation with clinicians from St. Paul's Hospital.

Artemis – marking surgical flaps using surgical navigation Sep 2014 – Apr 2015
Team lead and developer on a prototype tracking system with the Kinect v2 using C/C++ and Microsoft WPF to track a surgical marker in 3D space. Senior course project with Novadaq Inc.

SELECTED ACHIEVEMENTS

2017: Best Paper Award (11th Annual Augmented Environments for Computer Assisted Interventions)
2017: Best Paper Award (11th Annual Lorne D. Sullivan UBC Urology Research Day)
2017: Rising Star Award (UBC Faculty of Applied Science)
2017: Faces of Today Award Recipient (UBC) – outstanding leadership and efforts to improve the community
2016: Winner of the Rick Hansen Access Innovation Challenge.
2015: Finalist in Medical Device Development Centre's Awards for Excellence in BME Design and Innovation
2015: Engineers in Scrubs Research Fellowship.
2015: Alexander Graham Bell Canada Graduate Scholarship (NSERC) – Master's level.
2011 – 2015: Dean's Honour List – sessional averages of 86.3%, 89.9%, 89.2%, and 91.8%.
2014: Trek Excellence Scholarship for Continuing Students (UBC) – top 5% of students for the year.
2014: Undergraduate Student Research Award (NSERC).

COMMUNITY AND VOLUNTEER WORK

Advisor (UBC Biomedical Engineering Student Team) Aug 2015 – Aug 2017
Advising project teams on a technical and administrative basis; and recruiting of engineering students.

Co-Director, Committee Member (Hatching Health) Feb 2016 – May 2017
Led the logistics, planning, and sponsorship requirement of Vancouver's leading inter-disciplinary medical innovation event featuring 100 participants, 35 mentors, a team of 6 organizers and a budget of $23,000.

Founder, Organizer and Mentor (UBC Biomedical Engineering Connections) Sep 2016 – May 2017
Started a student life initiative connecting undergraduate, new graduates and current graduate students together to promote a sense of community, and support incoming students' queries.

Treasurer, Radio Host, Contributor. (UBC Sharing Science Radio) Feb 2015 – Jan 2017
Organized a weekly science radio show. Topics include deep sea exploration, bees, and mental biases.

Founder and President. (UBC Technology in Medicine Club) Aug 2014 – Dec 2015
Led the club in facilitating hands-on workshops and seminars to educate medical and engineering students. Topics included: evolution of surgical technology, medical device collaboration, and e-Health technologies.

Assistant Coach. (South Delta Varsity Football Club) May 2010 – Aug 2015
Led and taught over 80 teenagers on the techniques and game of American football on a weekly basis, leading to over 18 students receiving university scholarships.

References Available Upon Request