

# N. Rich Nguyen

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## SUMMARY

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An engaging, adaptable, and enthusiastic teacher passionate about contributing to an inclusive culture of higher learning. 4+ year experience teaching computer science courses to a total of 1,458 CS students. Co-authored 12 peer-reviewed journal and conference papers in bio-medical image analysis and machine learning with 85 citations on Google Scholar. Mentored over 80 students, including many women and minorities, in peer-led learning and community building projects. Led a tutoring center to serve over 3,500 appointments per year (360% growth). Managed a total budget of \$375,000 allocated among several student services.

## EDUCATION

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<b>Ph.D. in Computing and Information Systems</b> <i>University of North Carolina at Charlotte</i> Dissertation Title: Reducing Training Effort in Biological Image Classification Systems Advising Committee: Min Shin, Richard Souvenir, Andrew Willis, Zbyszek Ras, and Mark Clemens	<b>December 2016</b> <i>Charlotte, NC</i>
<b>M.S. in Computer Science</b> <i>University of North Carolina at Charlotte</i> Thesis Title: Tracking Colliding Cells <i>in vivo</i> Microscopy Video Advising Committee: Min Shin, Richard Souvenir, and Toan Huynh	<b>December 2009</b> <i>Charlotte, NC</i>
<b>B.A. in Mathematics, Concentration in Statistics</b> <i>University of North Carolina at Charlotte</i> <i>Magna Cum Laude</i> (GPA 3.91)	<b>May 2008</b> <i>Charlotte, NC</i>
<b>B.S. in Computer Science, Concentration in Intelligent Systems</b> <i>University of North Carolina at Charlotte</i> <i>Magna Cum Laude</i> (GPA 3.92)	<b>December 2007</b> <i>Charlotte, NC</i>

## EXPERIENCE

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<b>Assistant Professor</b> <i>Department of Computer Science, UVA</i> <ul style="list-style-type: none"><li>o Develop and implement innovative instructional method for the graduate Machine Learning course enrolled by 97 students in Fall 2018.</li><li>o Collaborate with 2 instructors to manage the program and data representation course with 450 CS students.</li><li>o Guide and mentor 32 teams of students in the Machine Learning for Virginia projects</li><li>o Co-supervise a team of 35+ undergraduate TAs to support a large group of CS students.</li><li>o Evaluate, monitor and mentor 16 undergraduate student academic progress.</li><li>o Serve and support functional activities of diversity and student engagement departmental committees</li></ul>	<b>Aug 2018 – present</b> <i>Charlottesville, VA</i>
<b>Lecturer and Career Manager</b> <i>College of Computing and Informatics, UNC Charlotte</i>	<b>Feb 2014 – Aug 2018</b> <i>Charlotte, NC</i>

- o Serve as the coordinator for four major aspects of the college experience (recruitment, engagement, internships, and placement) with faculty members across three departments.
- o Teach the Computing Professionals Series, a comprehensive seminar to help streamline undergraduate student engagement with average enrollment of over 250 students per semester.
- o Managed a total budget of \$375,000 over the past 3 years allocated among several student services.
- o Oversee a tutoring center of 10 tutors to serve over 3,500 individual sessions a year.
- o Establish the Industry Panels emphasizing the collaboration with 20+ industry partners (including 5 Fortune 500 companies) to focus on the most important aspects of early professional development.
- o Publish weekly newsletters to keep CS students connected to on-campus opportunities with over 42% readership (compared to industry average of 17%).

**Adjunct Instructor**

**Jan 2013–May 2013**

*Department of Computer Science, UNC Charlotte*

*Charlotte, NC*

- o Acted as an instructor of record of the Design and Analysis of Algorithms course with 51 students.
- o Responsible for curriculum design and assessment activities on an open-source course management system.
- o Achieved rating of 4.77/5 for "Overall, I learned a lot from this course" (Department average of 4.07).
- o Achieved rating of 4.74/5 for "Overall, this instructor was effective" (Department average of 3.87).

**Research Assistant**

**Aug 2007 – Dec 2012**

*Video and Image Analysis (VIA) Lab, UNC Charlotte*

*Charlotte, NC*

- o Developed an effective machine learning algorithm to detect various cell types which reduced up to 10 times the training effort from a biology technician.
- o Met regularly with a medical doctor, a lab technician, a biologist, and a biology doctoral student to understand their computational needs and provide them with customized software solutions.
- o Worked with and mentored a few undergraduate students during summer research program.
- o Published *CollidingCellTracker*, an open-source cell tracking package (URL: [bit.ly/collidingCellTracker](http://bit.ly/collidingCellTracker).)

**Summer Intern**

**Summer 2007, 2008, 2009**

*Cannon Research Program, Carolinas Healthcare System*

*Charlotte, NC*

- o Developed a medical analysis software in collaboration of a medical doctor and a lab technician to collect and analyze videos of a liver microcirculation experiment.
- o Interacted with 50 medical professionals and students through weekly seminars in a health research center.

**AWARDS**

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<b>Best Research Talk:</b> Natural Science, 13 <sup>th</sup> Graduate Research Symposium, UNCC	2013
<b>First Place in Computing and Informatics:</b> 12 <sup>th</sup> Graduate Research Fair, UNCC	2012
<b>First Place in Computer Science:</b> 11 <sup>th</sup> Graduate Research Fair, UNCC	2011
<b>Lab Member of the Year:</b> Future Computing Lab (FCL), UNCC	2010
<b>First Place in Multidisciplinary Research:</b> 9 <sup>th</sup> Graduate Research Fair, UNCC	2009
<b>Chancellor’s List:</b> Computer Science Department, UNCC	2005, 2006, 2007
<b>Chapter Delegate:</b> Phi Theta Kappa Honor Society, Charleston, SC	2005
<b>First Place in Algebra II:</b> ICTM Regional Math Contest, Urbana–Champaign, IL	2003
<b>First Place in 10<sup>th</sup> Grade Group:</b> Programming Contest, Danang City, Vietnam	2001

## FUNDING

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### OPERATING BUDGETS.....

- **Founding Director.** “Dean’s Ambassador Program: Leveraging Community Building and Creative Thinking to Make a College-wide Social Impact”, Office of the Dean, College of Computing and Informatics, August 2015 – May 2018. Total Budget: \$89,500.
- **Supervisor.** “Tutoring Center: Providing Excellent Peer Tutoring, Study Coaching, and Academic Support to All CS Undergraduate Students”, College of Computing and Informatics, August 2015 – July 2018. Total Budget: \$197,680.
- **Coordinator.** “Computer Science Learning Community”, Learning Communities, UNC Charlotte, August 2014 - May 2018. Total Budget: \$28,000.
- **Faculty Sponsor.** “Preceptors for Top 40 Courses”, University Career Center UPIP Program, UNC Charlotte, August 2014 - December 2017. Total Budget: \$42,000.

### SPONSORED GRANTS.....

- **Organizer.** “2016 CharlotteHack: The First Student Hackathon at UNC Charlotte”, sponsored by Premier HealthCare Inc., January 2016. Award: \$5,000.
- **Faculty Adviser.** “2015 Girls In Tech Day: Building A Community for Young Women in Science and Technology”, sponsored by College of Computing and Informatics. April 2015. Award: \$1,200.

### SCHOLARSHIPS/FELLOWSHIPS/AWARDS.....

- **Faculty Tuition Awards.** College of Computing and Informatics, UNC Charlotte. August 2014 - December 2016. Total Award: \$10,528.
- **Graduate Fellowship.** Graduate Assistant Support Program (GASP), The Graduate School, UNC Charlotte. August 2009 - May 2014. Total Award: \$80,234.
- **Tuition Differential Awards.** The Graduate School, UNC Charlotte. August 2007 - May 2009. Total Award: \$12,759.
- **Scholarship.** UNISYS Corporation, Raleigh, NC, August 2005 - May 2006. Award: \$1,500.
- **Scholarship.** Rotary International, Statesville, NC. January 2004 - July 2005. Award: \$3,500.

## PUBLICATIONS

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### REFEREED JOURNAL ARTICLES.....

- [1] E.Norris, M. Fish, C. Culberson, **N. Rich Nguyen**, M. Shin, M. Clemens. Hydrogen sulfide modulates sinusoidal constriction and contributes to hepatic micorcirculatory dysfunction during endotoxemia. *The American Journal of Physiology*, March 2013.
- [2] **N. Rich Nguyen**, E. Norris, S. Keller, T. H. Huynh, M. Clemens, M. C. Shin, Tracking Colliding Cells in vivo Microscopy, *Biomedical Engineering, IEEE Transactions on*, 58(8):2391-2400, August 2011.
- [3] T. H. Huynh, **N. Rich Nguyen**, S. Keller, C. Moore, M. C. Shin, I. McKillop, Reducing Leukocyte Trafficking Preseves Hepatic Function after Sepsis, *The Journal of Trauma*, Lippincott Williams & Wilkins, 69(2):360-7. August 2010.

### REFEREED CONFERENCE PAPERS.....

- [4] **N. Rich Nguyen** and M. Shin, Detecting Social Insects in Videos using Spatiotemporal Regularization, *2017 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Santa Rosa, CA, March 26-29, 2017.

- [5] S. J. Schmugge, L. Rice, **N. Rich Nguyen**, J. Lindberg, M. Shin, Detection of cracks in nuclear power plant using spatial-temporal grouping of local patches, *2016 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Lake Placid, NY, 2016, pp. 1-7.
- [6] S. J. Schmugge, C. Thao, **N. Rich Nguyen**, J. Lindberg, M. Shin, Automatic detection of cracks during power plant inspection, *Proceedings of the 2014 3rd International Conference on Applied Robotics for the Power Industry*, Foz do Iguassu, 2014, pp. 1-5.
- [7] **N. Rich Nguyen**, M. Donaldson-Matasci, M. Shin. Improving Pollen Classification with Less Training Effort, *In Proc. IEEE Workshop on the Applications of Computer Visions (WACV)*, Clearwater Beach, Florida, January 17-18, 2013.
- [8] E. Norris, C. Culberson, **N. Rich Nguyen**, M. Shin, and M. Clemens, Hydrogen Sulfide Increases Hepatic Perfusion Heterogeneity via an Acute Constrictor Effect in Endotoxemia. *In the 63<sup>rd</sup> Annual Meeting of The American Association for the Study of Liver Diseases (The Liver Meeting)*, Boston, Massachusetts, November 9-13, 2012.
- [9] **N. Rich Nguyen**, E. Norris, M. Clemens, M. C. Shin, Rapidly Adaptive Cell Detection using Transfer Learning and a Global Parameter, *In the 2<sup>nd</sup> International Workshop on Machine Learning in Medical Imaging (MLMI) in conjunction with MICCAI*, Toronto, Canada. September 18-22, 2011.
- [10] Eric Norris, Cathy Culberson, **N. Rich Nguyen**, M. C. Shin, and Mark Clemens. Hydrogen Sulfide Contributes to Hepatic Microcirculatory Dysfunction During Endotoxemia. *In the 62<sup>nd</sup> Annual Meeting of The American Association For the Study of Liver Diseases (The Liver Meeting)*, San Francisco, California, November 4-8, 2011.
- [11] **N. Rich Nguyen**, S. Keller, T. H. Huynh, M. C. Shin, Tracking Colliding Cells, *In IEEE Workshop on the Applications of Computer Visions (WACV)*, Snowbird, Utah December 7-8 2009.
- [12] S. J. Schmugge, S. Keller, **N. Rich Nguyen**, R. Souvenir, T. Huynh, M. Clemens, M. Shin, Segmentation of Vessels Cluttered with Cells using a Physics based Model, *In International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, New York, September 6-10 2008.

POSTERS.....

- [13] **N. Rich Nguyen, Iuliia Poliakova, Sahithi Meduri, Joshua Hutcheson, and Ryan Ke**, "CodeNC: Integrating Computational Thinking into K-12 Instructional Activities using Animated Videos," **SIGCSE'19: Proceedings of the 50th ACM Technical Symposium on Computing Science Education**, Minneapolis, Minnesota, USA. 2019.
- [14] **N. Rich Nguyen**, "Affective Peer Tutoring," **SIGCSE'18: Proceedings of the 49th ACM Technical Symposium on Computing Science Education**, Baltimore, MD, USA. 2018.
- [15] **N. Rich Nguyen**, "Creating a Diversity Chain to Raise Culture Awareness among CS Students," *2017 Prospect for Success (PFS) Charrette*, UNC Charlotte, 30 March 2017. Poster presentation.
- [16] **N. Rich Nguyen**, "Hosting Industry Panels to Promote Professional Development in Computer Science," *2015 Prospect for Success (PFS) Charrette*, Charlotte, USA, March 30, 2016. Poster presentation.

## TECHNICAL REPORTS.....

- [17] **N. Rich Nguyen**, "Age Progression Using Image Morphing," Technical Report in *Computational Photography, ITCS 6110*, UNC Charlotte. April 2009.
- [18] C. Kumar, M. Gour, **N. Rich Nguyen**, Use case Specifications: Dance Competition Management System (DCMS). Technical Report in *Software Engineering, ITCS 6112*, UNC Charlotte. November 2008.
- [19] **N. Rich Nguyen**, Understanding Tracking and StroMotion of a Soccer Ball. Technical Report in *Computer Vision, ITCS 5142*, UNC Charlotte. November 2007.

## TALKS/PANEL DISCUSSIONS.....

- [20] **N. Rich Nguyen**, Upsorn Praphamontripong, "Diversity, Equity, and Inclusion Skits," Invited Workshop in Teaching Assistant Practicum CS 2910, University of Virginia. March 2019.
- [21] **N. Rich Nguyen**, "What makes you resume standout,," Invited Workshop in Teaching Assistant Practicum CS 2910, University of Virginia. November 2018.
- [22] **N. Rich Nguyen**, "Improving Pollen Classification with Less training effort," Graduate Research Symposium, UNCC. March 2013.
- [23] **N. Rich Nguyen**, "Gameplay: Motivating college students in the classroom," Center of Graduate Life, UNCC. April 2012.
- [24] **N. Rich Nguyen**, "How to organize research papers," CCI GRADS, UNCC. November 2012.
- [25] **N. Rich Nguyen**, "Rapidly adaptive cell detection," Graduate Research Symposium, UNCC. March 2012.
- [26] **N. Rich Nguyen**, "Tracking cells in vivo microscopy," Graduate Seminar, UNCC. April 2011.
- [27] **N. Rich Nguyen**, "Tracking colliding cells," NSF REU Symposium, UNCC. June 2010.
- [28] **N. Rich Nguyen**, "Programming style guidelines," Future Computing Lab, UNCC. May 2010.
- [29] **N. Rich Nguyen**, "Cell tracking in microscopy videos," Carolina Medical Center. July 2009.

## DISSERTATION/THESIS.....

- [30] **N. Rich Nguyen**, Reducing training effort in biological image classification. Doctoral Dissertation. University of North Carolina at Charlotte, 2016.
- [31] **N. Rich Nguyen**, Tracking colliding cells in intravital video microscopy. Master's Thesis. University of North Carolina at Charlotte, 2009.

## TEACHING

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### **Introduction to Machine Learning**

**Spring 2018**

*Department of Computer Science, ITCS 4156*

*Expected Enrollment: 55 students*

Introduction to the machine learning pipeline of data collection, feature creation, algorithms, and evaluation for classification and regression, with an emphasis on practical applications. Covers fundamental concepts, such as training, validation, over-fitting, and error rates in addition to commonly used machine learning algorithms, such as decision trees, Naive Bayes, and random forests.

**Computing Professionals Seminar****Fall 2014, Fall 2015, Fall 2016, Fall 2017***College of Computing and Informatics, ITSC 1600**Average enrollment: 251 students*

This course should be taken by all Freshmen during their first semester in the College of Computing and Informatics. This course is designed to assist with the intellectual and social transition to university by increasing the involvement of students in the intellectual life on campus and within the College of Computing and Informatics community. The course provides an orientation to resources available to students; promotes oral and writing skills; and enables students to develop a personal education plan. The course has three components: a seminar series, peer group engagement, and extra-curricular engagement. Activities include written reflections on all three components, individual performance in peer group engagement activities, peer review of other students in the class, and the development of a personal education plan.

**Computing Professionals for Transfer Students****Spring 2015, Spring 2016, Spring 2017, Spring 2018***College of Computing and Informatics, ITSC 2600**Average enrollment: 134 students*

Transfer students are usually a diverse group of students with a diverse set of needs. To meet the challenges that many of these students face once they reach the four-year institution, this course conducts an in-depth transfer student orientation and connects transfer students to support resources that specifically meet their needs. Moreover, this course demonstrates how transfer students can successfully become ready for computing majors and concentration. Students will learn about setting goals, defining their dream career, getting hand-ons experience in all of the concentrations offered by the College, planning coursework, and working in a team. Several guest speakers and industry panels will discuss and explain, in detail, various aspects of a professional career in IT-related fields. Throughout this course, students will build a professional profile including their goals, values, dream career, student organizations, coding skills, communication skills, curriculum plan, professional network, team TED talk, resume, and a 30-second elevator pitch.

**Design and Analysis of Algorithms****Spring 2013***Department of Computing Science, ITCS 2215**Enrollment: 51 students*

Introduction to the design and analysis of algorithms. Design techniques: divide-and-conquer, greedy approach, dynamic programming. Algorithm analysis: asymptotic notation, recurrence relation, time space complexity and trade-offs. Study of sorting, searching, hashing, and graph algorithms.

**ADVISING****ACADEMIC ADVISING**.....**Academic Advisor:** Advised 113 students across all undergraduate levels *AY 2017–2018***Academic Advisor:** Advised 113 students across all undergraduate levels *AY 2017–2018***Academic Advisor:** Advised 109 students across all undergraduate levels *AY 2016–2017***Academic Advisor:** Advised 91 students across all undergraduate levels *AY 2015–2016***Academic Advisor:** Advised 41 students across all undergraduate levels *AY 2014–2015***FORMER STUDENTS SUPERVISED**.....**Name - Current Program/Employer:** Sponsored Studies/Services/Projects *Graduation***Jacqueline White - B.S.:** CMS High schools Interactive Bird-eye View *Expected 2019***Fatih Agirtmis - B.S.:** Student Engagement and Rewards Program *Expected 2019***Katrina Harley - MS:** Guidebook App: Be The Future of Computing *Expected 2019***Jeremy Bohannon - B.S.:** \help: Online Programming Support *Spring 2018***Amanda Lee - B.S.:** Picture Day: LinkedIn Profile for Students *Spring 2018***Elizabeth Thompson - M.S.:** CharlotteHack: 1<sup>st</sup> Student Hackathon at UNCC *Spring 2018***Ikran Hassan - M.S.:** Tutors' Programming Workshop Series *Fall 2017***Ciara Moreno - M.S.:** Tableau: Topic Wordcloud Visualization *Fall 2017*

<b>Rachel Chesley - Wells Fargo:</b> BitBucket Page: Tutor Resource Library	<i>Spring 2017</i>
<b>Itgel Ganbold - Kingsmen Software:</b> Academic Planning System	<i>Spring 2017</i>
<b>Shannon Butler - Fidelity:</b> Engaging Group Activities for 1 <sup>st</sup> Year Students	<i>Spring 2017</i>
<b>Serge Neri - Bank of America:</b> My Internship Experience (MIX) Series	<i>Spring 2017</i>
<b>Darshesh Patel - Currently Seeking:</b> Student Engagement and Rewards Program	<i>Spring 2017</i>
<b>Matthew Brien - Empowered Benefits:</b> Humans of CCI Project	<i>Spring 2017</i>
<b>Arion Almond - AvidXchange:</b> CCI Career Code: Becoming a T-shaped Professional	<i>Fall 2016</i>
<b>David Farthing - Measurement Inc.:</b> Indoor Navigation for Academic Buildings	<i>Fall 2016</i>
<b>Ryan Carpenter - IBM:</b> Programming Concept Timeline	<i>Spring 2016</i>
<b>David Ekoue - Wells Fargo:</b> Design Patterns For Tutoring	<i>Spring 2016</i>
<b>Julian Leicht - Bank of America:</b> Tutoring Appointment System	<i>Spring 2015</i>
<b>Anish Patel - Microsoft:</b> In-Residence Tutoring for Learning Community	<i>Fall 2015</i>

## SERVICE

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UNIVERSITY-LEVEL.....	
<b>Task Force:</b> 10-Year Learning Community Report, UNC Charlotte	<i>2017–2018</i>
<b>Steering Committee:</b> Learning Communities, UNC Charlotte	<i>2015–2018</i>
<b>Presenter:</b> Why CCI?, UNCC Explore (to 1,440 visitors total)	<i>2014–2018</i>
<b>Steering Committee:</b> Prospect For Success, UNC Charlotte	<i>2014–2016</i>
<b>Search Committee:</b> International Student Advisor, ISSO at UNC Charlotte	<i>2016</i>
<b>Founding Organizer:</b> CharlotteHack: 1 <sup>st</sup> Student Hackathon at UNC Charlotte	<i>2016</i>
<b>Judge:</b> 2015 Charlotte Research Scholars	<i>2015</i>
COLLEGE-LEVEL.....	
<b>Diversity and Inclusion Committee:</b> Dept. of Computer Science, SEAS, UVA	<i>2018-present</i>
<b>Chair:</b> Scholarship Committee, manage \$151,000 annual scholarship awards	<i>2016–2018</i>
<b>Founding Director:</b> Dean's Ambassador Program (15 student ambassadors)	<i>2015–2018</i>
<b>Supervisor:</b> CCI Tutoring Center (10 peer tutors)	<i>2014–2018</i>
<b>Career Advisor:</b> Help CS students with resume, job search, mock interviews	<i>2014–2018</i>
<b>Master of Ceremonies:</b> Fall Student Convocation	<i>2015–2018</i>
<b>Faculty Coordinator:</b> Computer Science Freshmen Learning Community	<i>2014–2018</i>
<b>Presenter:</b> Enriching Your College Experience, SOAR (to 1,580 new students)	<i>2014–2018.</i>
<b>Academic Advisor:</b> Department of Computer Science	<i>2014–2018</i>
<b>Ad-hoc Committee:</b> Writing Across the Curriculum	<i>2016–2017</i>
<b>Judge:</b> Innovated Computing Projects	<i>2015–2016</i>
<b>Organizing Committee:</b> Dean's High Achievers	<i>2014–2016</i>
<b>Task Force:</b> Women in Computing Initiatives	<i>2015–2016</i>
STUDENT ORGANIZATIONS.....	
<b>Co-advisor:</b> Association of Computing Machinery (ACM), UVA	<i>2018-present</i>
<b>Co-advisor:</b> Odyssey Outreach: Tutoring AP CS courses in local schools, UNCC	<i>2016-2018</i>

<b>Advisor:</b> Student Organization Councils, CCI, UNCC	<i>2017-2018</i>
<b>Advisor:</b> Charlotte Hack Club: Sending more Students to hackathons, UNCC	<i>2016-2018</i>
<b>Advisor:</b> ACM's Women in Computing (ACM-W), UNCC	<i>2014-2015</i>
<b>President:</b> Graduate Student Organization, CCI, UNCC	<i>2012-2013</i>
<b>Demo Coordinator:</b> Future Computer Lab, UNCC	<i>2009-2012</i>
<b>President:</b> Charlotte Student Chapter, Association of Computing Machinery (ACM)	<i>2007-2009</i>
<b>Senator:</b> Student Government Association, UNC Charlotte	<i>2005-2006</i>
<b>Public Information Officer:</b> Student Government Association, Mitchell College	<i>2004-2005</i>