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 Durham, NC 27707, USA

RESEARCH INTERESTS Computer Vision, Image Processing, Pattern Recognition,
 Computer Graphics, Machine Learning

EMPLOYMENT **Tenure-Track Assistant Professor** August 2010–present
 Department of Mathematics and Computer Science
 North Carolina Central University, Durham, NC, USA

Research Assistant May 2004–June 2010
 Center for Visualization & Virtual Environments
 University of Kentucky, Lexington, KY, USA

Research Intern June 2008–June 2009
 Research and Technology Center
 Robert Bosch LLC, Palo Alto, CA, USA

Research Engineer August 1997–November 2000
 Research and Development Center
 Shanghai Hitachi Electrical Appliance Co., Ltd., Shanghai, China

EDUCATION **University of Kentucky**, Lexington, KY, USA
 Doctor of Philosophy in Computer Science, July 2010

Eastern Kentucky University, Richmond, KY, USA
 Master of Science in Computer Science, December 2002

Huazhong University of Science and Technology, Wuhan, China
 Bachelor of Engineering in Mechanical Engineering, July 1997

REFEREED *(Authors with * are graduate students or post-docs under my supervision)*

- JOURNAL PUBLICATIONS
1. Santosh Kumari, Suresh L Mehta, Gaolin Z. Milledge, Xinyu Huang, Haining Li, P. Andy Li, Ubisol-Q10 Prevents Glutamate-induced Cell Death by Blocking Mitochondrial Fragmentation and Permeability Transition Pore Opening, *Accepted by International Journal of Biological Sciences*, 2015 (Impact Factor: 4.509).
 2. Mingpei Liang*, Xinyu Huang, Chung-Hao Chen, Xin Chen, Alade Tokuta, Counting and Classification of Highway Vehicles by Regression Analysis, *IEEE Transactions on Intelligent Transportation Systems*, Volume PP, Issue 99, Pages 1-11, May 2015 (Impact Factor: 2.377).
 3. Mingpei Liang*, Xinyu Huang, Chung-Hao Chen, Gaolin Zheng, Alade Tokuta, Robust Calibration of Cameras with Telephoto Lens using Regularized Least Squares, *Journal of Mathematical Problems in Engineering*, Volume 2014, Article ID 689429,

9 pages, February 2014 (Impact Factor: 1.082).

4. Gaolin Zheng, Assefa Tesfay, Xinyu Huang, Alade Tokuta, A Clique-Based Approach to the Identification of Common Gene Association Sub-Networks, *Applied Mathematics* Volume 4, No. 6, Pages 893-898, June 2013.
5. Zhenzhou Wang, Xinyu Huang, Ruigang Yang, YuMing Zhang, Measurement of Mirror Surfaces using Specular Reflection and Analytical Computation, *Springer Journal of Machine Vision and Applications (MVA)*, Volume 24, Issue 2, Pages 289-304, February 2013 (Impact Factor: 1.444).
6. Guangming Huang*, Jiwoong Kim*, Xinyu Huang, Gaolin Zheng, Alade Tokuta, A Statistical Framework for Estimation of Cell Migration Velocity, *Journal of WSCG*, Volume 20, No. 1, Pages 29-36, February 2012.
7. Ruigang Yang, Xinyu Huang, Sifang Li, Christopher Jaynes, Toward the Light Field Display: Autostereoscopic Rendering via a Cluster of Projectors, *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, Volume 14, Issue 1, Pages 84-96, January 2008 (Impact Factor: 2.445).

REFEREED
CONFERENCE
PUBLICATIONS

8. Xiaodong Gu*, Andi Zang, Xinyu Huang, Alade Tokuta, Xin Chen, Fusion of Color Images and LiDAR Data for Lane Classification, *23rd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Seattle, Washington, USA, November 3-6, 2015. [Acceptance Rate: 79/216=37%]
9. Yajie Zhao, Changpeng Ti, Xinyu Huang, Alade Tokuta, Ruigang Yang, A Performance Comparison between Circular and Spline-based Methods for Iris Segmentation, *Proceedings of 22nd International Conference on Pattern Recognition (ICPR)*, Pages 351-356, Stockholm, Sweden, August 24-28, 2014. [Acceptance Rate: 792/1406=56%]
10. Yajie Zhao, Xinyu Huang, Jizhou Gao, Alade Tokuta, Cha Zhang, Ruigang Yang, Video Face Beautification, *Proceedings of IEEE International Conference on Multimedia & Expo. (ICME)*, Pages 1-6, Chengdu, China, July 14-18, 2014. [Oral, Acceptance Rate: 72/716=10.1%]
11. Changpeng Ti, Xinyu Huang, Alade Tokuta, Ruigang Yang, A Red-eye Detector for Iris Segmentation using Shape Context, *Proceedings of SPIE Biometric and Surveillance Technology for Human and Activity Identification X*, 87120M, Baltimore, Maryland, USA, April 29 - May 3, 2013.
12. Mingpei Liang*, Gaopin Zheng, Xinyu Huang, Gaolin Milledge, Alade Tokuta, Identification of Abnormal Cervical Regions from Colposcopy Image Sequences, *Communication Papers Proceedings, International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision*, Pages 130-136, Plzen, Czech Republic, June 24-27, 2013.
13. Xinyu Huang, Changpeng Ti, Alade Tokuta, Ruigang Yang, An Experimental Study of Pupil Constriction for Liveness Detection, *Proceedings of IEEE Workshop on the Applications of Computer Vision (WACV)*, Pages 252-258, Tampa, Florida, USA, January 15-17, 2013.

14. Xinyu Huang, Bo Fu, Changpeng Ti, Alade Tokuta, Ruigang Yang, Robust Varying-Resolution Iris Recognition, *Proceedings of IEEE Fifth International Conference on Biometrics: Theory, Applications and Systems (BTAS)*, Pages 47-54, Arlington, Virginia, USA, September 23-27, 2012.
15. Miao Liao, Xinyu Huang, Ruigang Yang, Interreflection Removal for Photometric Stereo by Using Spectrum-dependent Albedo, *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Pages 689-696, Providence, Rhode Island, USA, June 20-25, 2011. [Acceptance Rate: 438/1677=26%]
16. Gaolin Zheng, Guowang Mu, Chung-hao Chen, Xinyu Huang, Stable Clustering of Temporal Gene Expression Data, *WorldComp International Conference on Data Mining (DMIN)*, Las Vegas, Nevada, USA, July 18-21, 2011.
17. Xinyu Huang, Jizhou Gao, Sen-ching Cheung, Ruigang Yang, Manifold Estimation in View-based Feature Space for Face Synthesis Across Pose, *Computer Vision - Asian Conference on Computer Vision (ACCV)*, Lecture Notes in Computer Science, Volume 5994, Pages 37-47, Xi'an, China, September 23-27, 2009. [Oral, Acceptance Rate: 36/670=5%]
18. Xinyu Huang, Liu Ren, Ruigang Yang, Image Deblurring for Less Intrusive Iris Capture, *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Pages 1558-1565, Miami, Florida, USA, June 20-25, 2009. [Acceptance Rate: 383/1462=26%]
19. Xianwang Wang, Xinyu Huang, Jizhou Gao, Ruigang Yang, Illumination and Person-Insensitive Head Pose Estimation Using Distance Metric Learning, *Computer Vision - European Conference on Computer Vision (ECCV)*, Lecture Notes in Computer Science, Volume 5303, Pages 624-637, Marseille, France, October 12-18, 2008. [Acceptance Rate: 243/871=28%]
20. Xinyu Huang, Xianwang Wang, Jizhou Gao, and Ruigang Yang, Estimating Pose and Illumination Direction for Frontal Face Synthesis, *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, Pages 1-6, Anchorage, Alaska, USA, June 23-28, 2008.
21. Xinyu Huang, Jizhou Gao, and Ruigang Yang, Calibrating Pan-Tilt Cameras with Telephoto Lenses, *Computer Vision-Asian Conference on Computer Vision (ACCV)*, Lecture Notes in Computer Science, Volume 4843, Pages 127-137, Tokyo, Japan, November 18-22, 2007. [Acceptance Rate: 156/551=32%]
22. Xinyu Huang, Jizhou Gao, Liang Wang and Ruigang Yang, Exemplar-based Shape from Shading, *Proceedings of IEEE International Conference on 3-D Digital Imaging and Modeling (3DIM)*, Pages 349-356, Montreal, Canada, August 21-23, 2007.
23. Ruigang Yang, Xinyu Huang, Sifang Li, Christopher Jaynes, Toward the Light Field Display: Autostereoscopic Rendering via a Cluster of Projectors, *Proceedings of Short Papers for the Conference of the European Association of Computer Graphics (Eurographics)*, Pages 61-64, Vienna, Austria, September 4-8, 2006.
24. Ruigang Yang, Shunnan Chen, Xinyu Huang, Sifang Li, Liang Wang, and Chris Jaynes, Towards the Light Field Display, *Proceedings of IEEE Virtual Reality Work-*

shop on Emerging Display Technologies (VR-EDT), Pages 23-24, Bonn, Germany, March 12-16, 2005.

25. Ruigang Yang, Xinyu Huang, Shunnan Chen, Efficient Rendering of Integral Images, *Proceedings of ACM SIGGRAPH Posters*, Article 44. Pages 149, Los Angeles, California, USA, July 31-August 4, 2005.

NON-
REFEREED
PUBLICATIONS

26. Chung-Hao Chen, C. Chang, J.M. Li, Jim Allen, Xinyu Huang, Gaolin Zheng, and K. M. Iftekharruddin, Vehicle Segmentation and Recognition for Estimating Exhaust Emissions Based on Automated Video Traffic Systems, *The Fourth International Forum on Systems and Mechatronics*, pages 147-154, Virginia Beach, Virginia, USA, August 6-9, 2012.

PATENTS &
PATENT
APPLICATIONS

27. Liu Ren, Xinyu Huang, Ruigang Yang, Iris Deblurring Method Based on Global and Local Iris Image Statistics, *US Patent*, No.: US 8,374,389 B2, February 12, 2013.
28. Ruigang Yang, Xinyu Huang, Remote Non-invasive Iris Image Acquisition System, *CN Patent*, No.: CN202632316 U, December 26, 2012.
29. Liu Ren, Xinyu Huang, Ruigang Yang, Depth-aware Blur Kernel Estimation Method for Iris Deblurring, *US Patent*, No.: US 8,203,602 B2, June 19, 2012.
30. Liu Ren, Xinyu Huang, Ruigang Yang, Time-of-flight Sensor-assisted Iris Capture System and Method, *US Patent*, No.: US 7,912,252 B2, March 22, 2011.
31. Liu Ren, Xinyu Huang, Ruigang Yang, Iris-Deblurring-Verfahren basierend auf globalen und lokalen Irisbildstatistiken, *DE Patent Application*, No.: 102010001331, August 19, 2010.
32. Liu Ren, Xinyu Huang, Ruigang Yang, Durch einen Flugzeugsensor unterstütztes Iriserfassungssystem und-Verfahren, *DE Patent Application*, No.: 102010001520, August 12, 2010.
33. Liu Ren, Xinyu Huang, Ruigang Yang, Tiefenbewusstes Blur-Kernel-Schätzverfahren unter Verwendung von Iris-Deblurring, *DE Patent Application*, No.: 102010001324, August 12, 2010.

GRANTS AND
GIFTS

Active

- PI, Understanding Visual Attention in Unconstrained Environments, NC Space Grant New Investigators Program, \$9,675, 2015–2016.
- Co-PI, Targeted Infusion Project: Development of a Computational and Engineering Mathematics Program Concentration at NCCU, NSF HRD 1533653, PI: Alade Tokuta, \$398,207, 2015–2017.
- Investigator, NCCU Computational Center for Fundamental and Applied Science and Education (NCCU CCFASE), NSF CREST Phase II Grant HRD-1345219, PI: B. Vlahovic, \$5,000,000, 2014–2019.

Pending

- PI, Science, Technology, and Policy of Children’s Healthy and Educational Well-being (STeP-Well), NSF, subcontracted to Duke University, Lead PI: Alade

Tokuta, \$ 2,924,580.64, 2016–2021.

Expired

- Investigator, NCCU National Aeronautics and Space Administration - Center for Aerospace Research and Education (NASA-CADRE), NASA-CADRE Phase I Grant, PI: B. Vlahovic, \$5,000,000, 2009–2014.
- Investigator, NCCU Computational Center for Fundamental and Applied Science and Education (NCCU CCFASE), NSF CREST Phase I Grant HRD-0833184, PI: B. Vlahovic, \$5,000,000, 2008–2013.
- Major Participant, Non-intrusive Biometrics, *Robert Bosch Collaboration Gift*, \$50,000, 2008.
- Major Participant, Wide-Area Rapid Iris Image Capture with Pan-Tilt-Zoom Cameras, *Department of Homeland Security*, \$731,827, 2005–2008.
- Major Participant, Three-Dimensional Light Field Display for Advanced Simulation and Training, *Department of Homeland Security*, \$285,085, 2005–2008.
- Major Participant, Supercomputing using Commodity Graphics Processing Units with Applications to Information Retrieval, *Kentucky Science and Engineering Foundation*, \$15,000, 2004–2005.

Declined

- Investigator, MIRO - Phase II NASA Center for Aerospace Device Research and Education at North Carolina Central University (NASA-CADRE), NASA, \$5,000,000, submitted in January, 2015.
- Co-PI, Development of Automated Train Counting Tool, NCDOT Research Program, \$393,606, submitted in September 2014.
- Co-PI, Center for UnManned Robotic Systems and Visual Computing (CURV), DOD DAF Airforce Research Lab, \$5,000,000, submitted in July 2014.
- PI, CAREER: Understanding of Visual Attention in Social Environments, \$651,288, submitted in July, 2013 (*Panel Recommendation: Highly Competitive*).
- Co-PI, NRI-Small: Cooperative Unmanned Robots for Surveillance and Exploration (CoURSE), NSF IIS, \$979,314, submitted in November, 2011.
- PI, RI:Small:Collaborative Research:RUI: Robust Depth-assisted Biometric Recognition in Less Intrusive Environments, NSF IIS, \$344,936, submitted in December, 2010.

AWARDS Outstanding Mentor Award, Science and Research Summer Program at North Carolina Central University, August, 2015

ADVISING

- *Post Docs:*
 Xiaodong Gu (Associate Researcher, Ph.D., Center for Space Science and Applied Research, Chinese Academy of Sciences, China) (October 2014 - present)
 Guangming Huang (Ph.D., Beihang University, China) (January 2012 - December 2012)
- *Graduate Students:*

Hao Guo (May 2015 - present)

Jiajun Jiang (B.E. University of Electronic Science and Technology, Chengdu, China) (August 2014 - present)

Jiwoong Kim (M.S., Hanyang University, Korea) (Graduated in Spring 2015)

Current Job: Bogopa Service Corp., Queens, NY

Mingpei Liang (B.E., Peking University, China) (Graduated in Summer 2014)

Current Job: NetBrain Technologies Inc., Boston, MA

o *Undergraduate Students:*

Terry McKoy (Graduated in Spring 2015)

o *Students for Whom I served as a Committee Member:*

Jason Su, M.S., Spring 2014

Junghyun Kim, M.S., Spring 2014

Minhyuk Lee, M.S., Spring 2014

Donovan Bradley, M.S., 2011

Kahsay, Amanuel, M.S., Spring 2011

Tafere, Haftu, M.S., Spring 2011

TEACHING
EXPERIENCE

o MATH1110: Elementary Statistics (GEC) (Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Summer 2015, Fall 2015)

o COMP1060: Introduction to Programming (Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015)

o COMP3810: Design and Analysis of Algorithms (Spring 2013, Spring 2014)

o COMP3710: Introduction to Computer Graphics (Fall 2011, Fall 2012, Fall 2013)

o CISG5105: Advanced Algorithms & Data Structure (Fall 2012)

o CISG5740: Computer Vision (Fall 2010, Fall 2014)

o CISG5760: Machine Learning (Fall 2013)

o CISG5810: Special Topic in Computer Information Science (Fall 2013)

o CISG5810: Pattern Recognition (Spring 2011, Spring 2012, Spring 2013, Spring 2015)

PROFESSIONAL
SERVICE ON
CAMPUS

o Faculty Senate Alternate 2012–2016

o Science and Research Summer Program at NCCU 2013–2015

o Science and Technology Student Research Symposium 2012

o Academic Unit Representative for NCCU Fall 2010 Open House

PROFESSIONAL
SERVICE OFF
CAMPUS

o *Organizing Committee Member of*
IEEE Conference of 3D Imaging, Modeling, Processing, Visualization, Transmission (3DIM/3DPVT, 2011)

o *Program Committee Member of*
Asian Conference on Computer Vision 2014

IEEE International Conference on Multimedia and Expo 2014, 2015

IEEE International Conference on Computer Vision 2009
IEEE Conference on Computer Vision and Pattern Recognition 2008
IEEE International Conference on Pattern Recognition 2008

◦ *Doctoral Consortium Mentor of*

IEEE International Conference on Multimedia and Expo 2014

◦ *Reviewer of*

ACM SIGGRAPH Asia 2012

Asian Conference on Computer Vision 2012

Central European Journal of Engineering

Elsevier Journal of Image and Vision Computing

IEEE Conference of 3D Imaging, Modeling, Processing, Visualization, Transmission 2011

IEEE Conference on Computer Vision and Pattern Recognition 2006, 2007, 2011, 2012, 2013, 2014, 2015

IEEE International Conference on Computer Vision 2011, 2013

IEEE International Conference on Pattern Recognition 2010, 2012, 2014

IEEE International Conference on Systems, Man, and Cybernetics 2014

IEEE International Symposium on Circuits and Systems 2013

IEEE Journal of Selected Topics in Signal Processing

International Journal of Parallel, Emergent and Distributed Systems

IEEE International Journal of Computer Vision

IEEE Transactions on Pattern Analysis and Machine Intelligence

IEEE Transactions on Information Forensics & Security

IPSN Transactions on Computer Vision and Applications

European Conference on Computer Vision 2012

Journal of Mathematical Problems in Engineering

Journal of Pattern Recognition Research

Springer Journal of Computing

Springer Journal of Machine Vision and Applications