

## Biographical Sketch

Charles D. Nicholson

### A. Professional Preparation

Bachelor of Science, Physics, University of North Texas, May 1999

Bachelor of Science, Mathematics, University of North Texas, May 1999

Master of Science, Decision Technologies, University of North Texas, May 2001

Doctor of Philosophy, Operations Research, Southern Methodist University, December 2010

### B. Relevant Professional Appointments

8.2013 – present Assistant Professor, Industrial and Systems Engineering, Univ of Oklahoma

10.2008 – 8.2013 Director and Founder, CN Analytics LLC, North Richland Hills, TX

8.2007 – 8.2013 Teaching Professor, Engineering and Information Science, DeVry, Dallas, TX

5.2002 – 8.2007 Director of Consumer Analysis, Blockbuster, Dallas, TX

2.2000 – 5.2002 Database/Statistical Analyst, UICI (Health Markets), North Richland Hills, TX

9.1997 – 9.1999 Research/Academic Assistant, Univ of North Texas

### C. Products (\*\* with student author)

#### i. Related Products

Kennington, J. and C.D. Nicholson. 2010. The uncapacitated time-space fixed-charge network flow problem: An empirical investigation of procedures for arc capacity assignment. *INFORMS Journal on Computing*, **22**: 326-337.

Nicholson, C.D., K. Barker, and J.E. Ramirez-Marquez. 2014. Vulnerability analysis for resilience-based network preparedness. In revision in *Reliability Engineering and System Safety*.

Wang, X.\*\*, Nicholson, C.D. and K. Barker. 2015. Network performance heuristics for resilience strategies. Submitted to *Reliability Engineering and System Safety*.

Beyney, C.\*\* and Nicholson, C.D. 2015. Predictive Modeling using Sentiment Analysis of Twitter Data. To be submitted to *Journal of Computational Science*.

Zhang, W.\*\* and C.D. Nicholson. 2015. Optimal Network Flow: A Predictive Analytics Perspective. Submitted to *Journal of Heuristics*.

#### ii. Other Products

Nicholson, C.D. and K. Barker. 2014. Parameterized dynamic slope scaling procedure for fixed-charge network flow problems. Submitted to *European Journal of Operational Research*.

Zhang, W.\*\* and C.D. Nicholson. 2014. Objective scaling ensemble approach for mixed integer programming. Submitted to *INFORMS Journal on Computing*.

Zhang, W.\*\* and C.D. Nicholson. 2014. Metaheuristic search and the parameterized dynamic slope scaling procedure. Submitted to *Networks*.

Nicholson, C.D. and W. Zhang. 2015. Regression-based Relaxation for Network Flow Optimization. Submitted to *INFORMS Journal on Computing*.

Barker, K., C.D. Nicholson, and J.E. Ramirez-Marquez. 2014. Resilience-based importance measures for network design optimization. Presented at Industrial and Systems Engineering Research Conference, Montreal, QC.

#### **D. Synergistic Activities**

Developed proprietary data analytics solutions for eight corporations across the nation and internationally over 12 years. Projects included a wide variety of predictive and prescriptive analytics for diverse companies representing multi-billion dollar retail, finance, and restaurant industries. An excerpt of successful data-intensive solutions included customer-level behavior prediction, fraudulent activity detection, geographic information systems (GIS) strategic and competitive targeting, and product allocation optimization.

Developing new curriculum at undergraduate and graduate levels for a new interdisciplinary program within Data Science and Analytics.

Collaborating with regional planning and transportation faculty on analytics research for the Oklahoma Advanced Lab for Transportation Research, Education, and Outreach.

Forming a Data Science and Analytics Laboratory to engage with faculty at the University of Oklahoma, as well as industry, on a variety of data rich research problems.

#### **E. Collaborators and Other Affiliations**

##### *i. Recent Collaborators (other than advisors)*

Kash Barker (OU), Amy Cerato (OU), Harvey Cutler (Colorado State)

Bruce Ellingwood (Colorado State), Paolo Gardoni (Illinois – Urbana-Champaign), Suleyman Karabuk (OU), Jong Lee (Illinois – Urbana-Champaign), Hussam Mahmoud (Colorado State), Guoqiang Shen (OU), John W. van de Lindt (Colorado State), Jose E. Ramirez-Marquez (Stevens Institute of Technology), Naiyu Wang (OU), Sammy Zahran (Colorado State),

##### *ii. Graduate Advisors*

PhD advisor: Jeff Kennington, University Distinguished Professor, Lyle School of Engineering, Southern Methodist University (deceased)

##### *iii. Graduate Advisees*

Current PhD students: Jennifer Bergeron, Weili Zhang, Xiaodan Wang

Current MS students: Cyril Beyney, Leslie Goodwin, Oluwafemi Oseni, Olivia Perret