

EDUCATION

- Duke University** Durham, NC
Ph.D. in Electrical & Computer Engineering 2016–2021
- Dissertation: *Probabilistic Time-to-Event Modeling Approaches for Risk Profiling*
 - Committee: Drs. Lawrence Carin (advisor), Ricardo Henao (co-advisor), Henry Pfister, Michael J. Pencina, and Galen Reeves
- Duke University** Durham, NC
M.S. in Electrical & Computer Engineering, GPA: 3.9/4.0 2016–2018
- Project: *Learning to hash with neural autoencoders*
 - Selected Coursework: Bayesian and Modern Statistics, Machine Learning, Advanced Machine Learning, Pattern Classification and Recognition Technology, Information Theory, Textual Data Acquisition & Analysis, Programming, Data Structures & Algorithms in C++, Cloud Computing
- Duke University** Durham, NC
B.S.E in Electrical & Computer Engineering, GPA: 3.7/4.0 2009–2013
- Thesis: *Radar Signal Processing for Stand-off life sign Monitoring*, Advisor: Dr. Jeffrey L. Krolik
 - Certificate: Markets & Management Studies
 - Graduation with Distinction In Electrical & Computer Engineering, Eta Kappa Nu

SELECTED WORK EXPERIENCE

- Stanford University** Stanford, CA
Postdoctoral Research Fellow, Medicine - Primary Care Outcomes Research 2021-Present
- Conducting research on causal inference and survival analysis methods for health care
 - Mentored by Dr. Sherri Rose
- Microsoft Research AI** Redmond, WA, USA
Research Intern Summer 2020
- Characterizing T-cell receptor and serology temporal dynamics in COVID-19 and Lyme patients
 - Mentored by Drs. Julia Greissl and Ted Meeds on the Immunomics Team
- Microsoft Research AI** Redmond, WA, USA
Research Intern Summer 2019
- Adaptive variational autoencoder for clustered textual representation
 - Mentored by Dr. Chunyuan Li on the Deep Learning and Natural Language Processing Team
- Savannah Informatics** Nairobi, Kenya
Senior Software Engineer Summer 2016
- Developed an authentication Electron desktop application based on fingerprint and electronic card readers
 - Mentored junior software developers in Agile software development practices, *i.e.*, TDD, pairing, continuous delivery, and continuous integration

ThoughtWorks

Software Consultant Developer

South Africa, Brazil, India, USA

2013–2016

- Developed (i) SpringMVC services, (ii) Java features, and (iii) platform event-driven microservices
- Projects: (a) Online banking application serving 15 million customers and (b) global retail analytics

Engineering World Health

On the Ground Coordinator

Arusha, Tanzania

Summer 2013

- Taught and supervised 3-hour lab sessions on electronics and medical equipments (repair and maintenance)

TEACHING

- **Graduate Teaching Assistant** Duke University Fall 2020
Probability for Electrical and Computer Engineers (ECE: 555)
- **Graduate Teaching Assistant** Duke University Spring 2018/2019
Pattern Classification and Recognition (ECE: 681)
- **Graduate Teaching Assistant** Duke University Fall 2017
Random Signals and Noise (ECE: 581)
- **Undergraduate Teaching Assistant** Duke University Spring 2013
Fundamentals of Digital Signal Processing (ECE: 381)
- **Undergraduate Laboratory Teaching Assistant** Duke University Fall 2012
Introduction to Signals and Systems (ECE: 280L)

SELECTED SCHOLARSHIPS AND AWARDS

- Rising Star in AI for Social Good *Harvard CRCS* 2021
- FOCUS Fellow *Georgia Tech* 2020
- GHC 20 Student Scholarship *AnitaB.org* 2020
- Best Paper Honorable Mentions *Association for Computational Linguistics* 2018
- Graduation with Distinction In Electrical & Computer Engineering *Duke University* 2013
- Eta Kappa Nu *IEEE* 2012
- Pratt Research Fellow *Duke University* 2012
- Duke University Scholar *Duke University* 2009
- Pestalozzi Scholar *Pestalozzi International Village, East Sussex, England* 2007
- Joshua Mqabuko Nkomo Scholar *Econet Wireless, Zimbabwe* 2007
- Zimbabwe Junior Chess Champion *Zimbabwe Schools Chess Association* 2007

PUBLICATIONS

1. **P. Chapfuwa**, C. Tao, C. Li, C. Page, B. Goldstein, L. Carin, R. Henao, “Adversarial Time-to-Event Modeling”, *Int. Conf. Machine Learning (ICML)*, 2018
2. D. Shen, Q. Su, **P. Chapfuwa**, W. Wang, G. Wang, L. Carin, R. Henao, “NASH: Toward End-to-End Neural Architecture for Generative Semantic Hashing”, *Assoc. for Computational Linguistics (ACL)*, 2018
3. **P. Chapfuwa**, C. Li, N. Mehta, L. Carin, R. Henao, “Survival Cluster Analysis”, *ACM Conf. on Health, Inference, and Learning (ACM CHIL)*, 2020

4. **P. Chapfuwa**, C. Tao, C. Li, I. Khan, K. Chandross, M. J. Pencina, L. Carin, R. Henao, “Calibration and Uncertainty in Neural Time-to-Event Modeling”, *IEEE Transactions on Neural Networks and Learning Systems*, 2020
5. **P. Chapfuwa**, S. Assaad, S. Zeng, M. J. Pencina, L. Carin, and R. Henao, “Enabling Counterfactual Survival Analysis with Balanced Representations”, *ACM Conf. on Health, Inference, and Learning (ACM CHIL)*, 2021

INVITED TALKS

- “Survival Analysis meets Counterfactual Inference” *Microsoft Research AI* 2020
- “Bringing modern machine learning to survival analysis” *Data Science Consortium, University of Michigan* 2020
- “Generative Time-to-Event Modeling for Risk Profiling” *Biostatistics Seminar at Boston University* 2021
- “Counterfactual Survival Analysis with Balanced Representations” *Harvard CRCS Rising Stars: Health* 2021
- “Beyond ranking: Building robust time-to-event models” *ELLIS Human-Centric Machine Learning* 2021
- “Enabling clinical decision making with causal survival analysis” *Microsoft Research AI* 2021

SKILLS

- **Reviewer:** NeurIPS (2019/2020/2021), ICML (2020/2021), ACL (2020), AAAI (2020/2021), ICLR (2020/2021), EMNLP (2020), Medical Image Analysis (2021)
- **Programming:** TensorFlow, Pytorch, Git, Java, Python, JavaScript, R, MATLAB, C++, AngularJS, SpringMVC

LANGUAGES

- **Languages:** Fluent in English, Ndebele and Shona
- **Languages:** Conversational Zulu, Swahili, Spanish and Portuguese