

Chuanzhi (George) Dong, Ph.D.

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US Permanent Resident (Green Card Holder), Houston, Texas

EDUCATION

Ph.D., The University of Central Florida, USA Civil Engineering	2019
M.Sc., The University of Texas at Austin, USA Computer Science	2025 (Expected)
M.Sc., Zhejiang University, China Bridge and Tunnel Engineering	2016
B.S., Zhejiang Gongshang University, China Engineering Management	2011

SUMMARY OF QUALIFICATIONS

- 10+ years of experience in system diagnostics, prognostics, and predictive maintenance, leveraging big data analytics and machine learning to extract actionable insights and enhance system reliability.
- Proficient in designing and developing AI solutions for complex systems and application scenarios by utilizing machine learning, deep learning, and predictive models.
- In-depth hands-on experience in developing and implementing algorithms for time series analysis, natural language processing (NLP)/large language models (LLM), computer vision, and generative AI, coupled with strong skills in GUI development for improved user interaction.
- Extensive experience in data acquisition, transformation, augmentation and management across various platforms and tools, enabling effective data utilization, pipeline, and decision-making.
- Proven track record of thought leadership and contribution to the academic and industrial fields with 35 journal articles, 32 conference papers/presentations, 6 patents, and 3 software copyrights, evidenced by 1800+ citations on Google Scholar and a pending US patent.

PERSONAL SKILLS & COMPETENCES

Programming and Development: Python, SQL, C++, C#, R, OpenCV, Pandas, NumPy, PyTorch, TensorFlow, Git, Qt

Data Analysis Tools: AWS (S3, EC2, Athena, SageMaker, etc.), GCP, Power BI, MySQL, PostgreSQL

Data Processing and Analysis Skills: Machine Learning, Deep Learning, Data Mining, Statistics, Digital Signal Processing, Data Pipeline and ETL Processes

Specialized Domain Knowledge: Time Series Analysis, Computer Vision, Natural Language Processing (NLP)/LLM, Internet of Things (IoT), Numerical Simulation

PROFESSIONAL EXPERIENCE

Data Scientist, Shell, Houston, TX	Apr 2023-Present
• Develop intelligent solutions using NLP and LLMs to process unstructured data such as contracts, tender documents, and work orders, conduct assessment and predictive analysis, and enhance decision-making processes in asset management, supply chain optimization, and tender processing. • Develop advanced machine learning algorithms to conduct anomaly detection, fault diagnostics, and failure prognostics of industrial systems for predictive maintenance purposes. • Develop ensemble learning methods with feature importance ranking and predictive analysis to extract	

crucial industrial KPIs for prioritizing workflows, optimizing resource allocation, predicting unplanned downtime, and finally support asset management by reducing deferment.

- Develop and manage a comprehensive data pipeline with data ingestion, cleansing, transformation, augmentation, aggregation, and enhancement of diverse data types sourced from multiple origins. This pipeline effectively supports asset management through the **visualization** and evaluation of KPIs, ensuring data is meticulously organized and readily accessible for strategic decision-making.

Senior Prognostics and Health Management Engineer, Rochester Institute of Technology, Rochester, NY
Nov 2022-Mar 2023

- Designed and implemented an **ML** pipeline to extract, visualize, and analyze data from vehicle health and usage management systems, develop and deploy **ML** algorithms for diagnostics, prognostics, and predictive maintenance of complex systems like engines and transmissions.
- Built a comprehensive computer vision solution utilizing **ML** techniques for garment/cloth classification, object detection, and semantic segmentation. Implemented data acquisition, preprocessing, storage, and online process pipelines, enabling efficient recycling and resource recovery operations.
- Conducted in-depth research into image processing and computer vision technologies, applying **ML** models to conduct condition assessment and quality analysis of intricate microstructures, including micro circuit boards, to ensure high standards of maintenance and reliability.

Structural & Analytics Engineer, Palo Alto Research Center, Palo Alto, CA
May 2021-Sep 2022

- Implemented an intelligent solution by utilizing fiber optic sensors, cameras, edge device, Internet of Thing (IoT)-based health monitoring system, **machine learning**, and **AWS** services such as S3, EC2, Athena, and **SageMaker** for real-time diagnostics and prognostics of transportation infrastructures.
- Investigated system operation status, structural behaviors, and load capacity under super loads/significant events by using time series data analysis, computer vision, and **machine learning** based methods.

Postdoctoral Scholar, University of Central Florida, Orlando, FL
Jan 2020 - May 2021

- Innovated and executed a deep **learning**-based solution, integrating multi-modal multi-source information such as conventional sensor signals, visual and infrared images, NDT and FEA results, text records of maintenance and historical drawings, to facilitate the detection of local structural damages such as cracks, spalling, delamination, and monitoring of structural health and operation status.

SELECTED RESEARCH PROJECTS

- **Office of Naval Research (ONR):** **Machine learning** for enhanced CBM+ (condition-based maintenance). Key technical resource. Nov 2022 – Mar 2023.
- **National Science Foundation (NSF):** US-Ireland partnership program: bridge health monitoring using cameras and computer vision methods. Key technical resource. Aug 2016 – Nov 2020.
- **NASA:** Reliability-based bridge inspection framework using non-destructive evaluation (NDE) and structural health monitoring (SHM) for effective and efficient asset maintenance. Key technical resource. Jan 2022 – May 2021.

HONORS & AWARDS

- The **Outstanding Dissertation Award** by College of Engineering and Computer Science, University of Central Florida. 2020
- The First prize of the 1st International Project Competition for Structural Health Monitoring 2020
- The Bronze award of the 44th International Exhibition of Inventions of Geneva 2016
- The First prize of student paper competition at the 6th Cross-strait Symposium on Structural Monitoring and Control in Civil Engineering, China 2015

George Chuanzhi Dong

- Katy, TX, US

Contact Information

- ngq-ncj-09s@mail.dice.com

Work History

Total Work Experience: 4 years

- **Data Scientist** Shell
Apr 01, 2023
- **Senior Prognostics And Health Management Engineer** Rochester Institute Of Technology
Nov 01, 2022
- **Structural & Analytics Engineer** Palo Alto Research Center
May 01, 2021
- **Postdoctoral Scholar** University Of Central Florida
Jan 01, 2020

Education

- **Masters** | The University of Texas at Austin
- **Doctorate** | The University of Central Florida

Skills

- **computer vision** - 10 years
- **deep learning** - 10 years

- **image processing** - 10 years
- **machine learning** - 10 years
- **predictive modelling** - 10 years
- **python** - 10 years
- **regression analysis** - 10 years
- **time series analysis** - 10 years
- **tree-based analysis** - 10 years
- **c#** - 6 years
- **aws** - 4 years
- **natural language processing** - 4 years
- **power bi** - 4 years
- **pytorch** - 4 years
- **sql** - 4 years
- **large language model** - 2 years

Work Preferences

- Desired Work Settings: Remote or Hybrid
- Likely to Switch: True
- Willing to Relocate: False
- Travel Preference: 25%
- Work Authorization:
 - US
- Work Documents:
 - Green Card Holder
- Security Clearance: False
- Third Party: False
- Employment Type:
 - Full-time
 - Contract - W2
 - Contract to Hire - W2

Profile Sources

- linkedin: <https://www.linkedin.com/in/chuanzhidong>
- github: <https://chuanzhidong.github.io>
- Dice: <https://www.dice.com/employer/talent/profile/245c19741d374e401038897ab581f161>