Minh **Phan**

Applied Research Scientist · Process Analytic & Data Scientist

Leuven, Belgium

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Food scientist and data-driven process engineer with 6+ years of experience spanning industrial food manufacturing and applied research. Specialises in process modelling, digital twins, and cold-chain quality systems, with a track record of delivering measurable results — from 25-30% productivity gains in industrial settings to extending fruit shelf life and identifying energy savings of food cold chain at scale.

Skills

Transferable skills	Project Management, Leadership, Coaching, Negotiation, Communication, Presentation, Reporting, Technical Writing (LaTeX)
Process Engineering	Digital Twin Development, Process Design (PFD/P&ID), Process/Kinetic Modeling, Process Optimization, System Analysis, Plant Layout Design, Industrial Scale-up
Quality Management	HACCP, GMP, Statistical Process Control (SPC), Kaizen, PDCA, 5S
Data Analytics	Experiment Design (JMP), Data Analysis, Statistical Modeling, Data Visualization
Programming	Python (advanced), MATLAB (intermediate), R (beginner), Julia (beginner)
Languages	English (Proficient), Dutch (A2), Vietnamese (Native)

Experience

Applied Research Scientist - Predictive Modeling Engineer

Oct. 2022 - Present

KU Leuven, Belgium

- Built a digital twin of a cold storage system for pear fruit, enabling data-driven improvements in storage efficiency and quality control.
- Developed predictive quality models of pear fruit applicable across the supply chain and validated them from pilot to industrial scale.
- Applied advanced storage technology to extend fruit shelf life by 2 days, compared with standard storage.
- Identified an 8% energy-saving potential of advanced storage technology versus standard technology, informing cost-benefit decisions for industrial adoption.
- Designed a cost-efficient, user-friendly method for estimating storage energy at the industrial scale, supporting facility-wide adoption.
- Worked with interdisciplinary academic and industry teams on modeling, data analysis, and technical problem-solving.
- Supervised masters students, managing their thesis scope, timelines, and technical direction.

Chemical Engineer

Jan. 2018 - Jun. 2019

AJINOMOTO, Vietnam

- Led technology transfer, factory innovation, and CapEx projects, coordinating across Production, QC/QA, and R&D departments.
- Adapted the umami salt purification line to a new yeast strain, increasing productivity by 25%.
- Improved fermentation productivity of soybean sauce by 10% through the oxygen supply optimization.
- Boosted mayonnaise filling capacity by 30% via a new system and a plant layout redesign.
- Managed piping and equipment maintenance to ensure process integrity and safety compliance.
- Applied Kaizen, PDCA, and 5S methodologies to drive continuous improvement across production processes.

Education

Ph.D. in Bioscience Engineering

Oct. 2022 - Present

KU Leuven, Belgium

- *Research project*: Developing a digital twin for the postharvest cold chain of fruits, with a focus on quality and energy efficiency.

M.S. in Food Technology (Magna Cum Laude)

Sep. 2020 - Jul. 2022

KU Leuven and Ghent University, Belgium

- *Master's thesis*: Non-destructive internal disorder detection of pome fruit using simulated X-ray radiographs and deep learning
  - Developed a deep learning approach (CNN-UNet) for detecting internal disorders in pome fruit from simulated X-ray radiographs.
  - Achieved 94% prediction accuracy.
- *Courses*: Thermal and Low-temperature processes of Foods, HACCP and Quality Assurance, Food Rheology, Food Chemistry and Microbiology, Food Fermentation, Postharvest Management and Disease Control

B.S. in Food Science and Technology (First Class, Honor)

Sep. 2013 - Apr. 2018

University of Technology, Vietnam National University System, Ho Chi Minh City, Vietnam

Honors & Awards

2020-2022 **A merit-based scholarship,** Vlaamse Interuniversitaire Raad *Belgium*