Charles Sizer

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Summary

Mathematician. Engineer. Programmer. Manager.

Objective: Advance my career in a position emphasizing data driven problem solving.

My career has focused on transitioning food products with unique processing challenges from development into production. I have a track record of applying iterative, constructive methods to proof-of-concept processing lines to create automated production systems which are integrated with upper levels of business logic. I enjoy and excel at troubleshooting software, fluid processes, and electrical systems. I solve complex problems by building models to evaluate steady-state and transient phenomena.

Experience

KD Automation — Jackson, WI

Systems Integration Manager *July 2019-Feb 2020*

Worked closely with a cross-disciplinary team to design and build an progressive assembly line.

Major responsibilities

- creation of schematics/BOM/panel layout
- assist with electrical panel builds
- program PLCs, HMIs, robots, camera and other automation devices
- commission machines

Dairyvative Technologies — Reedsburg & Sheboygan, WI

Director of Technology *2015- Oct 2018*

Managed the development of a novel dairy product, processing equipment, controls systems, facility, regulatory compliance, and intellectual property. Worked closely with Sr Management and direct reports to achieve commercialization and R&D goals. Led interactions with Federal and State regulators to determine how the product fit into existing regulatory frameworks. Built and documented Quality Systems to exceed compliance requirements. Managed department budget, hiring and training.

Accomplishments

- Developed new technology for milk preservation with a model-based approach
  - Designed & built commercial-scale prototype based on theory
  - Reduced theory to practice
  - Iteratively improved efficiency, reliability, quality, and safety by leveraging use of historical process data
  - Investigated complex viscosity phenomena of the product
- Commercialized milk preservation process
  - Designed custom batching, heat treating, and packaging solution for the process
  - Oversaw purchase, fabrication, installation, and commissioning of custom equipment
  - Designed and built a standards-complaint food-grade production facility
- Developed and deployed an industry leading SCADA system
  - eliminated paper records, reduced compliance burden, minimized down time
  - reduced labor requirements by 75%
  - Developed mechanisms for compliance with digital record keeping regulations (21CFR11)
  - Deployed and maintained full SCADA stack
    - Field level: Modbus RTU, 4-20mA loops
    - Equipment level: PLC ladder logic, Modbus TCP/RTU, Ethernet/IP, ZPL
    - Supervisory level: Custom UI, Jython scripting
    - Records & Reporting: SQL, Java, Python/Pandas

Cambrooke Foods (now a division of Ajinomoto) — Ayer, MA

Product Development Specialist *2012-2015*

Designed, assembled and commissioned food processing lines for a medical foods company. The lines included a hot-fill line for high-acid beverages and an AlfaLaval low-acid processing line for packaging medical foods on an aseptic Tetra Pak TPA/19. Member of the team that assembled and implemented the HACCP plan. Medical foods are considered the highest risk food category by the FDA since the patients are required to adhere to a strict diet consisting of only medical foods. As such, the facility was the first facility inspected under the Food Safety Modernization Act and passed the inspection with no adverse findings.

Accomplishments

- Formulated medical food product to meet guidelines for enteric nutrition
- Iterated design of equipment and thermal process to deliver enteric nutrition
- Formulated a protein enhanced rehydration beverage
- Designed process to gently sterilize protein and maximize shelf-life
- Managed small beverage production team

Pilot Aseptic — St. Charles, IL

Technician — *June 2010 - 2012*

- Tested effects of various thermal processes on clients' product formulations.
- Implemented necessary equipment modifications
- Maintained equipment and facility.
- Extensive on-the-fly trouble shooting of Alfa Laval VTIS & FLEX systems
- Created numerical heat-penetration model used by Pepsi Co. through present day

Education

Illinois Institute of Technology — Chicago, IL

Studied Applied Mathematics — *2004 – 2007*

Focused on discreet methods

Skills

Technical specialties: Networking. Python (NumPy, SciPy and Pandas), *Ignition!*. Familiar with SQL, ZPL, Git, LaTeX, Modbus and Ethernet/IP . Advanced Excel skills.

Certifications:v HACCP, BCPS

Interests

Non-exhaustive and in alphabetical order: cooking, computer security, hiking, kayaking, machine learning, rocket science, space exploration, sustainability