

# Charles Sizer

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## Summary

*Mathematician. Engineer. Programmer. Manager.*

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

I am a manager who has excelled at transitioning food products with unique processing challenges from development into production. I lead teams to solve complex problems by 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.

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## Experience

### Boombox Beverage LLC

SKOKIE, IL

#### Director of Food Safety and Quality

July 2020 - Present

Boombox Beverage is a startup company established, and plant designed, to process and package cold brew coffee. I was selectively hired to bring the plant into compliance with low acid canned food regulations.

##### *Accomplishments*

- Major contributor in key business decisions as part of start-up team leadership
- Hired, trained and, managed a dedicated Quality Team, a pillar of the organization
- Established Food Safety Program for a startup low acid canned food facility
- Created business policies and the tools to implement them
- Developed and implemented Food Safety Plan (HARPC) for all products.
- Worked closely with process authority to establish legal thermal processes
- Launched three new products for a national brand
- Driving force behind SQF level 1 certification effort

### KD Automation

JACKSON, WI

#### Systems Integration Manager

July 2019-Feb 2020

Brought onboard for a large project to fill gaps in the programming/design team. Worked closely with a cross-disciplinary team to design and build an progressive assembly line.

##### *Major responsibilities*

- creation and maintenance of schematics, bills of material, and panel layouts
- assist with electrical panel builds
- program PLCs, HMIs, robots, cameras and other automation devices
- commission machines

### Dairyvative Technologies

REEDSBURG & SHEBOYGAN, WI

#### Director of Technology

2013 - Oct 2018

Managed the development of a novel dairy product, processing equipment, controls systems, facility, regulatory compliance, and intellectual property for a tech start-up. Worked closely with Sr Management and direct reports to achieve commercialization and R&D goals.

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 by designing multivariate experiment and using scientific computing tools to analyze the data
- Led a team of 7 through a \$1MM facility build-out
- 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

- Led interactions with Federal and State regulators to determine how the product fit into existing regulatory frameworks
- 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 Therapeutics (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

- On leadership team of \$5MM facility build-out
- 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

Operated and maintained test-scale beverage processing equipment and utilities. Conducted trials on a wide variety of products.

- 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 discrete methods

## Skills & Certifications

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

**Certifications:** PCQI, HACCP, BPCS

## Patents

Sizer, C.E. and Sizer, C.E. IV. Method and Apparatus for sterilizing containers. US Patent 7,481,974 issued 27 January 2009.

Sizer, C.E. and Sizer, C.E. IV. Method and Apparatus for heating and dispensing sterile product. US Patent 7,595,470 issued 29 September 2009.

Sizer, C.E. and Sizer, C.E. U.S. Patent Application on Process for Making a Beverage Concentrate with a Low Concentration of Nucleation Sites.

## Interests

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