Capabilities

FRA staff has extensive capabilities in software development including:

- Machine Learning, AI, and HTM Algorithms for Big Data and Real-Time Analytics
- Sprinkler and Nozzle Spray Characterization Software
- Building Information Modeling (BIM) Plugins
- Thermal Radiation Models
- OpenFOAM/FDS Plugins
- Hydraulic Models for:
  - Inert Gas
  - Clean Agent
  - Hybrid System
  - Water
- Labview Interface and Calculation Engine
- Matlab and Mathematica
- Online and Interactive Models
- Mobile Device Apps
- Languages
  - Python
  - Java
  - Basic
  - C/C++
  - Pearl

FIRE & RISK ALLIANCE

About Us

Fire & Risk Alliance is a leader in fire and risk engineering. Our staff is composed of highly trained and educated engineers and scientists that focus on developing optimized solutions for our clients throughout the world. Our hands on practical experience, active engagement in the industry, and our applied research ensure that we provide state of the art solutions to our clients.

Software Development

We take a unique but common sense approach to the software development process with clients, *"Don't just get the physics right, get the relationship right."* What this means in practice is that we are focused on ensuring that the software fits your needs and objectives, not the other way around. From small proof-of-concept packages to world-wide distributions, our software development team has first hand insight into client needs, use cases, and workflow, and we are able to integrate this knowledge with the client to fast track projects without missing a beat.

Our FLEX approach ensures that not only is the code validated, verified, and customized for your organization but also that the ownership structure is customized for your organization giving you the freedom to develop, market, and own unique and strategically advantageous software.

Project Experience

- NSF Funded Revit BIM Plugin Development
- HTM Learning Algorithm for Fire State Determination
- NSF Funded ICorp SprayViz Development
- Custom Spray Characterization Client Database
- Dry System Water Delivery Time Calculation Software
- Inert Gas Hydraulic/Delivery Time Software
- Clean Agent Hydraulic/Delivery Time Software
- Custom Labview GUI and Calculation Engine

Contact

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Or visit us on the web to see our complete range of services

Flow Software

FRA staff have experience developing and maintaining all aspects of flow software. Whether it is single or two-phase flow we can develop models to determine agent arrival time, pressure, and concentration. We can build simple nodal models, such as what currently exists on the market, or we can build 3D models that incorporate our clients database of 3D CAD components.

Reporting capabilities including the documentation of simulation inputs, outputs, and bill of materials (BOM) are available, fully customizable to include the client's preferred format and branding. For sophisticated clients we can incorporate a feature to allow clients to obtain data from user/distributers to aid in sales predictions and supply chain management or even to place orders for needed components direct from within the software.

Specialty Software

While significant improvements have been made in computational fluid dynamics software there are many applications in which specialty software is needed to meet clients specific needs and doesn't presently exist. FRA has experience developing specialty software for a wide range of uses to fill these needs.

Our team has developed machine learning and HTM algorithms for use in real time data analysis and fire state determination based on multi-sensor criteria. These programs help to inform decision making that can minimize impacts to life safety, facility integrity, and assets.

We have also worked on the development of specialty CFD software including FireFOAM and FDS.