the Black Arcs

Position Title:	**Software Developer**
Current Incumbent:	**Vacant**
Reports to:	**Director of Technology**
Position Classification:	**IT Support**
Position Remuneration:	**$50,000 - $60,000 annual salary plus health benefits**
Position location:	**Work From Home / Fredericton, NB**
Date prepared/revised:	**December 21st, 2021**

The Black Arcs is a software firm based in Fredericton, New Brunswick, building neighbourhood-level digital twins to support government, the private sector, and academia. Our flexible scenario planning tools are used to evaluate new development opportunities in cities, support decision-makers, and create datasets for researchers. Our mission is to foster a deep understanding of community-level decisions through accessible, intuitive digital twins.

1. Purpose of the position:

Reporting to the Director of Technology, Software Developers are responsible for writing, modifying, and coding software related to IT systems at the Black Arcs. This position has been established to assist with the creation of services to automate digital map creation, agent-based modelling, and the disease modelling workflows of our simulation software.

2. Major Duties and Responsibilities:

Software Development – 65% of time

• Write, modify, integrate, and test software code;
• Maintain existing programs by making modifications as required;
• Participate in database administration and maintenance;
• Identify and communicate technical problems, processes and solutions;
• Assist in the collection and documentation of user requirements;
• Participate in planning and design of software architecture;
• Prepare reports, manuals and other documentation on the status, operations and maintenance of software as required.

Quality Control – 25% of time

• Contribute to testing and process development;
• Implement testing standards to ensure compliance;
• Write and run test suites and test cases;
• Report on results from test suites and test cases.

User Support – 5% of time

• Support stakeholders and colleagues who are using our products with technical assistance;

• Responding to queries via slack, email, or phone.

Policy and Administrative Support – 5% of time

• Provide input on policy and procedures related to operations and IT strategies;
• Policy and procedure audits related to IT;
• Perform other duties as required.

3. Education and Expertise Required:

Considered an asset but not required, the Software Developer is ideally in possession of a software engineering, computer science, or related degree. The position also requires 3 years of experience in project-oriented programming, or 2+ years of UI/UX development.

Required experience, in order of importance: node.js; mongoDB; HTML; CSS; Some experience with GiS is beneficial, but not required; transportation modelling; statistical analysis; ESRI/arcGiS experience an asset, any other modelling/simulation experience is an asset, experience with major software optimization projects, experience with any database languages (SQL etc), python, webGL (particularly pixi.js), game development.

Competencies Required include:

• Eliminates inefficiency in work processes and procedures;
• Shares useful information about industry issues and direction within the Black Arcs and helps chart appropriate responses to them;
• Communication and decision-making abilities that supports team cohesion and performance;
• Achievement oriented – an ability to take initiative, and a strong desire to succeed;
• Skills to successfully complete reports on time while adhering to requirements;
• Ability to be impartial and objective;
• Problem solving skills – an ability to effectively problem solve in a rapidly changing environment.

4. Goals and Performance Metrics

• Production of clean, well-documented code;
• Smooth workflows and reasonable ticket throughput.

5. Language

• Bilingualism is an asset but not required.

To be considered for this position please submit a resume to Luke Robertson via email at luke@blackarcs.org with the subject line "Software Developer Application."