



## UI/UX Designer-Developer

The BrainGate brain-computer interface (BCI) research team at Brown University is seeking an enthusiastic, highly skilled and innovative UI/UX Designer / Developer to contribute to a fast-paced engineering project that will define the future of brain-implantable neural interface technology to improve communication and independence for people with severe motor disabilities. This is a 1-year full-time contract position embedded on site with our team in the School of Engineering at Brown University in Providence, RI.

### Primary Responsibilities:

- Lead the overall UX/UI design for an integrated, multi-device, real-time system with diverse use scenarios in both academic and clinical settings
- Create and implement compelling and reliable UI/UX designs and software that meet high usability, functionality and aesthetic expectations
- Execute UI/UX design and implementation process, including discovery, use case scenarios, personas leading to prioritized UI/UX features
- Participate in the development of the system information architecture and data structures supporting the UI/UX
- Work closely with team engineers, clinicians and neuroscientists to help architect overall system integration approaches, device communication protocols and UI/UX solutions that provide effective visibility and control of the entire multi-device real-time system
- Work with the back-end software developer to create real-time, low-latency data-driven web applications including streaming graphic displays using highly efficient browser-based real-time graphing methodologies
- Write exceptional, highly consistent, well-documented modular code supportable and extensible by both experts and support staff
- Champion an iterative, user-centered UI/UX design-and-build process to create intuitive and elegant UIs
- Facilitate definition of the user experience and identify key issues and requirements
- Create sketches, interaction flows, wireframes, interactive prototypes and test protocols
- Work closely with functionality / back-end programmer(s) for agile-like front-to-back system implementation
- Lead creative thinking to address solution and implementation challenges,
- Effectively communicate design processes, ideas and solutions to clients and team members
- Work individually and as a critical member of a high performance cross-functional team
- Travel locally as needed to hospitals and to the homes of research study participants with ALS, spinal cord injury and brainstem stroke

### Required Skills:

- Bachelor's Degree or higher in Web or Graphic Design or related (visual design) field
- Demonstrated experience and portfolio in UI/UX design and execution (process) across a variety of platforms
- Passionate understanding of UI/UX best practices and emerging trends

- Proficiency with industry-standard & new creative tools/technologies for UI/UX & web design
- Expert knowledge and proficiency with web programming technologies including HTML5, CSS3, JavaScript, JS libraries, JSON and similar tools
- Implementation experience with real-time browser-based graphing techniques for low-latency, high-rate drawing / updating in HTML / JS charting or similar
- Expert proficiency with responsive design for web applications
- Experience leading rapid, iterative UI/UX development in small, effective agile teams
- Proficiency with code versioning and collaborative development tools
- Outstanding communication and presentation skills

### **Preferred Skills:**

- Proficiency in C/C++, Python, Go, high performance libraries, and other supporting back-end languages
- Experience programming in one or more game engines / environments such as JS, Phaser, Lua3D, Matter.js or Unity3D
- Programming experience with high-performance UDP or TCP/IP packet communication
- Experience designing Web UIs for accessibility
- Experience developing UI/UX for medical device or health care applications
- Experience creating GUIs that enable both interactive and programmatic / (scripted) execution
- Experience in both industry and research settings
- Proficiency with Matlab or Simulink
- Demonstrated interest in neuroscience, brain-computer interfaces and/or assistive technologies for people with disability
- Familiarity with neuroscience and electrical brain signals (action potentials, field potentials)
- Experience enabling remote access/support solutions
- Working knowledge of digital signals, digital sampling, bandpass filters

### **Working with the BrainGate Team:**

We are an internationally recognized, multidisciplinary team of engineers, computer scientists, neuroscientists and clinicians leading innovation in the field of assistive BCI. Our research has shown that a brain-computer interface implanted in motor cortex can enable individuals with paralysis or locked-in syndrome to reliably control a computer cursor using their imagined hand movements. This intracortical system can provide high-performance control of tablets and other consumer devices. We are expanding our team to help create the world's first fully mobile, wireless BCI that will be useable at home without technical oversight. Over the next year, we will define, build and deploy this state-of-the-art BCI technology. As the team's UI/UX expert, you will have a unique opportunity to apply your experience to this exciting and important project to create the future of this medical technology. Visit us at [BrainGate.org](http://BrainGate.org).

### **Benefits:**

You will be a full-time employee at Brown University with standard benefits including medical, dental and vision plans, all in an exceptional academic work environment.

### **To Apply:**

Applicants should forward their resume or CV to Drs. Leigh Hochberg and John Simeral, c/o Ms. Beth Travers ([beth\\_travers@brown.edu](mailto:beth_travers@brown.edu)).