React Developer: Maritime Software Engineering

About Us

DHI is an independent, international consultancy with over 60 years of experience developing computational models for water environments. The Digital Marine team builds cloud-based systems for maritime operations. NCOS ONLINE functions as a digital twin of port environments, running simulations that predict vessel behaviour based on current and forecasted conditions. The system enables data-driven decisions with demonstrable improvements in operational safety and efficiency.

Technical Challenges in Maritime Technology

In DHI's Digital Marine Team in Malaysia, we're applying modern web technologies to solve complex maritime challenges. Our work combines advanced weather modelling with real-time data processing to create tools that support critical decision-making in ports worldwide.

Technical Environment & Challenges

Our flagship system, NCOS ONLINE, processes environmental data and hydrodynamic models to predict vessel behaviour with high precision. The system integrates multiple data sources including:

- Real-time meteorological and oceanographic data feeds

- Complex forecast models

- Vessel specifications and performance characteristics

- Port infrastructure constraints

You will be tackling several technical challenges:

- Visualizing complex data in intuitive interfaces that enable quick, informed decisions by maritime professionals

- Implementing sophisticated state management for complex user interactions to screen different levels of risk

- Developing reusable software that can be applied across many clients with varying requirements

Recently, one of our solutions was recognized with the Innovation Excellence award for Australia Infrastructure by helping optimize vessel routes, resulting in measurable emission reduction, helping to make shipping greener.

The Role

As a React Developer, you'll work on:

- Maintaining and modernizing our existing React codebase

- Participating in architecture decisions for our planned migration

- Developing technical solutions for visualization of maritime data

- Working within our NX mono repo structure

You'll collaborate with a technically diverse team in our Kuala Lumpur hub, including developers, hydrodynamic specialists, and maritime experts.

Technical Growth Opportunities:

- Expand expertise in geospatial data visualization and processing

- Develop skills in complex state management and user interactions

- Contribute to architecture decisions in a mission-critical application

- Build domain expertise in a specialized technical field

- Gain hands-on experience in application architecture with clear paths to ownership

Technical Responsibilities:

- Troubleshoot and enhance our existing maritime application

- Build high-performance components using modern React in our NX mono repo

- Implement proper separation of business logic using MOBX stores

- Develop interactive map visualizations for maritime operations

- Write comprehensive test suites for both business logic and UI

- *Collaborate closely with senior developers and maritime domain experts*

Technical Requirements:

- *3+ years of React development experience*

- *Strong TypeScript skills*

- *Experience with state management (particularly MOBX)*

- *Proficiency with modern React patterns and hooks*

- *Solid testing experience*

- *Analytical thinking and problem-solving abilities*

Technical Nice-to-Haves:

- *Experience with mapping libraries (Deck.gl, mapbox), GDAL, QGIS*

- *Familiarity with MUI component library*

- *C# knowledge / full-stack experience*

- *Experience with NX monorepo*

- *Understanding of GraphQL, Hasura, and Entity Framework*

- *Design and UX experience*

- *Engineering background (civil, mechanical, marine)*

What We Offer

- *A challenging role with room for your own innovations and direct impact*

- *Complex technical problems that require innovative solutions*

- *Flexible working arrangements*

- *Supportive environment that encourages innovation, continuous learning and career progression*

- *Chance to work alongside passionate and talented colleagues and clients from across the globe*

- *Occasional travel to our other offices in Australia or Europe*

- *Work that matter – our solutions reduce maritime emissions and improve safety in ports worldwide*

Office location

You will be located in our office in Kuala Lumpur

Application Process

Send your CV and application along with any relevant technical portfolio or GitHub links.

Our interview process focuses on both technical skills and problem-solving approach:

- Initial discussion (20min)

- Technical interview including code review and problem-solving (1.5 hour)

- Final discussion with team leads (30min)

Join us in creating technology that's making shipping safer, more efficient, and more sustainable!