

The Next Wave:

AI-Powered Smart Ships & the Future of Seafaring

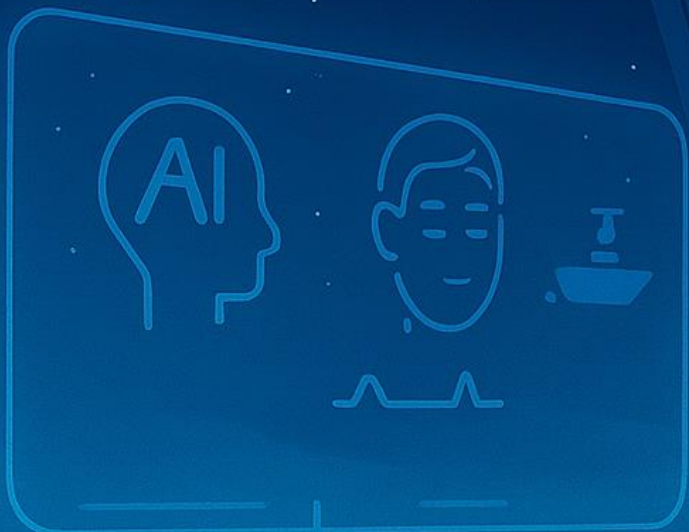


Confidence isn't decoration — it's fuel

By Konstantinos G. Sismanidis.



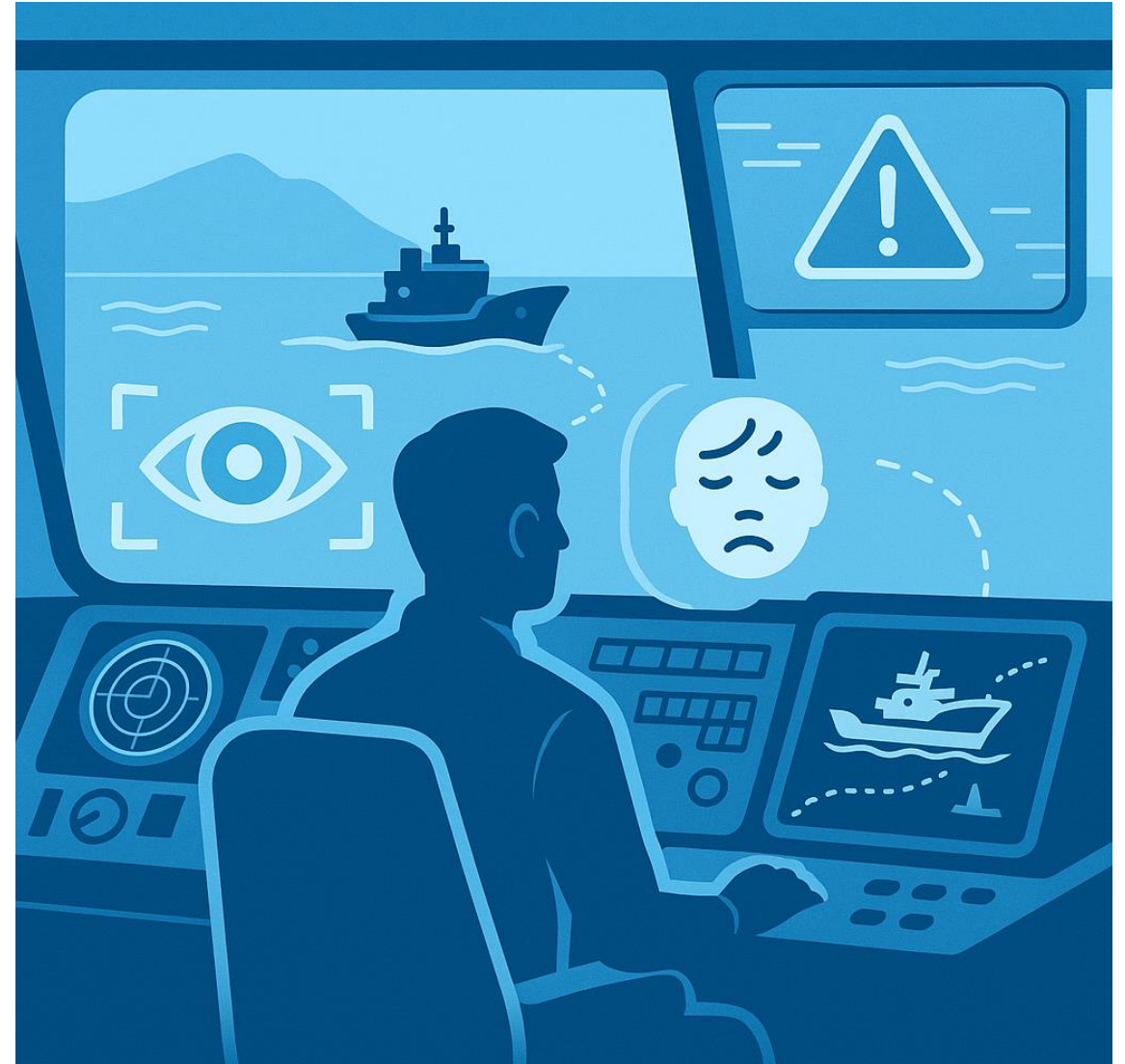
LEMUR
MARITIME



- A young cadet today may stand watch on a ship where the AI already knows the sea state, already scanned fatigue signs, and already predicts the next engine alarm.
- **Our responsibility is to make sure that cadet does not feel replaced — but empowered, prepared, and proud.**

AI Bridge Fatigue & Awareness

- Human judgement + AI vigilance = safer watchkeeping
- Fatigue detection & situational support becoming standard
- Readiness: human trust, training & bridge discipline evolve



AI Collision Avoidance & Smart Routing

- Real-time risk prediction, not reaction
- Machine vision complements radar & AIS
- Readiness: accept machine assistance, maintain command authority



PPE & Fall Detection / Crew Safety AI

- Safety moves from reactive reporting to **live prevention**
- Behavior awareness supports better practice, not policing
- Readiness: culture maturity & transparency in use of data



Digital Twin Engine Room & Predictive Maintenance

- Condition-based maintenance over calendar-based routines
- Intelligent diagnostics reduce downtime & cost
- Readiness: new skills — data literacy meets engineering expertise



Smart LNG Cargo Ops & Terminal Integration

- Loading monitored in real-time across vessel & shore
- AI raises alarms before operators see anomalies
- Readiness: joint crew-terminal standards & data interfaces



Port Biometrics & Identity Security

- Seamless, secure movement crew ↔ port
- Digital identity improves compliance & human security
- Readiness: global standards, privacy protection & crew onboarding



Maritime Cyber Defense & OT/IT Security

- Ship systems now targets navigation, power, cargo control
- Cyber becomes safety, not just IT concern
- Readiness: drills, ownership & cyber hygiene onboard



Drones & Robotics for Inspections

- Remove humans from height & confined-space risks
- AI surface scanning = faster decisions, fewer failures
- Readiness: training, SOP updates & acceptance by class & regulators



Human-AI Fleet Command Center

- Shore support centers transform operational intelligence
- AI highlights risks, humans lead decisions
- Readiness: mindset shift and support vs control, collaboration wins

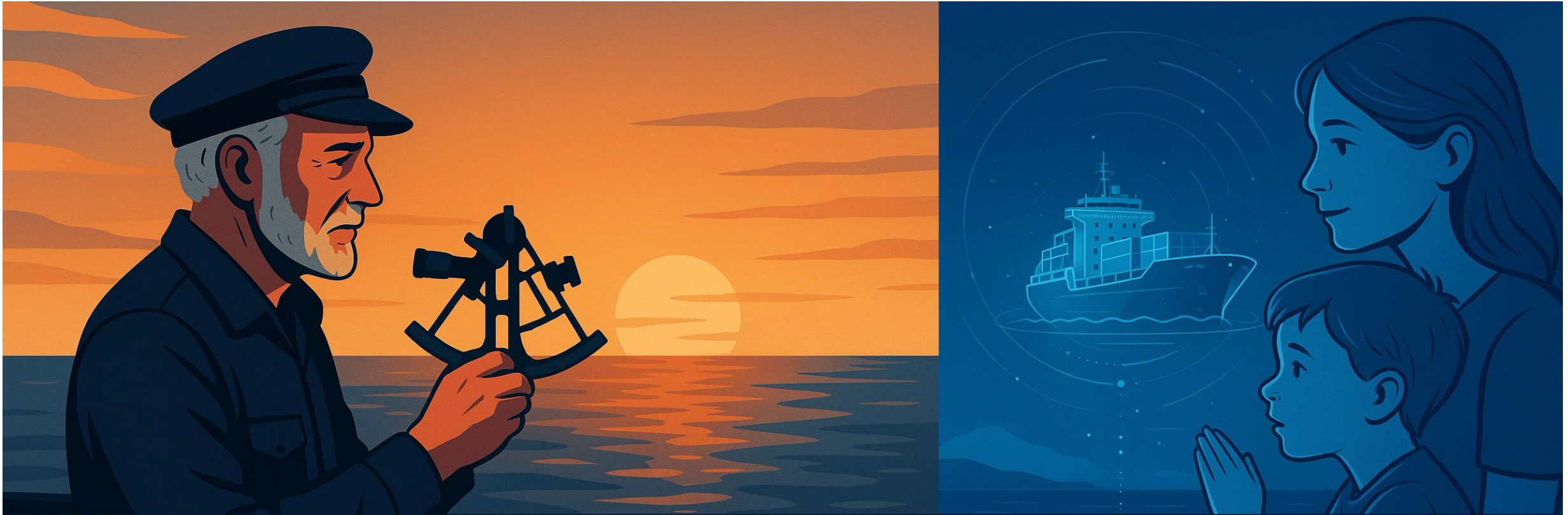


Autonomous Bridge Future Vision

- Officers transition from manual operators to **system supervisors**
- Autonomy is incremental: situational assist to decision support to execution
- Readiness:
 - competency frameworks,
 - trust,
 - governance, procedures



Question	Answer
AI replacing crew?	No — it replaces risk, not people
Are we ready?	Tech ready — mindset maturing
Is it safe?	Safer — human override always
If tech fails?	Seamanship takes command
Crew numbers?	New roles, not fewer people
Skills?	Seamanship + digital competence
Cyber?	Cyber = safety discipline



Seafarers once followed the stars. Tomorrows will follow intelligence. But the calling remains the same, and so does the spirit.





You work far from home.
You are never far from our care.
Not as policy – as promise.

Strength Love Connection
Protection

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Thank you !

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