Examples of Topics Covered in
HUMAN FACTORS: The Journal of the Human Factors and Ergonomics Society

Submissions to **Human Factors** may address a variety of topics, including the following.

ACCIDENTS, HUMAN ERROR
Accident analysis
Human error analysis
Risk assessment
Warning systems

AVIATION AND AEROSPACE
Aerospace medicine
Air traffic control
Automation
Crew resource management
Fatigue
Flight displays
Habitability
Long-term missions
Pilot, crew behavior
Pilot decision making

AGING
Aging processes
Designing for the elderly

AUTOMATION, EXPERT SYSTEMS
Adaptive automation
Autonomous agents
Compliance and reliance
Human-automation interaction
Knowledge elicitation
Expert-novice differences
Expert systems
Function allocation
Levels of automation
Mode awareness
Persuasive technology
Supervisory control
Technology acceptance
Trust in automation
Warning compliance

BIOMECHANICS, ANTHROPOMETRY, WORK PHYSIOLOGY
Anthropometry
Biomechanics
Biomechanical models - lower extremity
Biomechancial models - shoulder
Biomechanical models - spine
Biomechanical models - wrist
Electromyography (EMG)
Energy
Epidemiology
Forces and moments
Gait, posture
Human error: manufacturing
Interventions
Job risk assessment

Kinematics
Kinetics
Manual materials handling
Measures

Mind-body interaction
Musculoskeletal system (musculoskeletal disorders, cumulative trauma disorder)
Near-infrared spectroscopy (NIRS)
Oxygenation
Physical ergonomics
Physical work, loading
Quality control
Slips and falls
Spine, low back
Tissue loading
Upper extremity
Shoulder
Work physiology
Workplace surveillance
Work measurement
Wrist

COGNITION
Attentional processes
Automatic and controlled processing
Cognitive modeling, cognitive architectures (e.g., ACT-R)
Cognitive structure
Decision making
Distractions and interruptions
Dual task, time sharing, task switching
Embodied cognition
Information processing
Knowledge
Knowledge representation
Language
Learning
Memory (short-term, long-term, working memory)
Mental models, shared mental models
Mental workload
Metacognition
Multiple resource models
Naturalistic decision making
Problem-solving
Reasoning

Situation awareness
Situated cognition
Vigilance (sustained attention), monitoring, supervisory control
Visual search
Working memory

COMMUNICATION
Macro design features (networks, Web, conferencing, etc.)
Micro design features (coding, media, etc.)
Speech production
Speech perception

CONSUMER PRODUCTS, TOOLS
Product design
Tools
Warnings

DISPLAYS AND CONTROLS
Auditory displays
Computer interface
Display-control or stimulus-response compatibility
Display design priniciples
Graphical user interfaces (GUI)

Keyboards
Manual controls
Multimodality displays
Speech production and recognition
Speech user interfaces (SUI)
Supervisory displays (e.g., process control, automated systems)
Tactile/haptic displays
Touch screens
Trackballs, mice, joysticks, etc.
Visual, pictorial, object displays

ENVIRONMENTAL DESIGN
Architecture
Climate change
Energy
Sustainability
Workspace, workstation, "built environment" design

HEALTH CARE/HEALTH SYSTEMS
Anesthesiology and perioperative care
Care transitions and handoffs
Communication and teamwork in health care
Critical care
Emergency medicine and resuscitation
Event detection, reporting, and analysis
Gerontology and end-of-life care
Health-information technology (HIT)
Home health
Medical devices and technologies
Medical simulation/training and assessment
Medication management and safety

Medicine and its subspecialities
Mental health and related technologies
Nursing and nursing systems
Outpatient care
Patient-provider communication
Patient engagement and self-care
Patient safety
Pediatrics and neonatology
Radiology and medical imaging
Rehabilitation
Reproductive health and technology
Robotics and telesurgery
Safety culture and behavior change
Simulation training
Surgical care and procedural technologies
Telemedicine

HUMAN-COMPUTER INTERACTION, COMPUTER SYSTEMS
Cognitive models (e.g., GOMS)
Computer-supported collaborations
Cybersecurity
Ecological interface design
Environment/context
Graphics
Hardware
Interface evaluation
Mobile devices
Multimedia
Navigation
Software
Text
Usability/acceptance measurement and research
Wearable devices

HUMAN-ROBOT INTERACTION
Assistive technologies
Surgical systems
Teleoperation
Uninhabited aerial vehicles

HUMAN-SYSTEMS INTEGRATION

INDIVIDUAL DIFFERENCES
Adaptability
Age
Cognition
Experience
Gender
Handedness
National culture
Personality

MACROERGONOMICS AND THE ENVIRONMENT
Anthropology
Disaster response
Industrial/workplace ergonomics
Job stress

Organizational behavior/design, organizational psychology
Participatory ergonomics

MANUFACTURING, PROCESS CONTROL SYSTEMS
Operations research
Organizational factors
Reliability issues
Process control
Robotics
Scheduling
Testing and evaluation

METHODS AND SKILLS
Analysis and evaluation
Cognitive task analysis, cognitive work analysis
Computational modeling
Control theory
Design strategies, tools (e.g., rapid prototyping)
Discrete event simulation
Dynamic systems modeling
Ecological approaches (e.g., ecological interface design)
Ethnographic observations
Experimental design
Experimental statistics
Fuzzy signal detection theory
Hierarchical linear models
Human performance modeling
Industrial design
Knowledge elicitation/acquisition
Mathematical modeling
Meta-analysis
Multivariate analysis (e.g., MANOVA, multiple regression)
Nonlinear dynamical systems
Physiological measurement
Psychometrics, scaling
Prototyping
Psychophysical methods
Qualitative methods
Quasi-experimental designs
R
Reliability
Signal detection theory
Simulation
Statistics and data analysis
Structural equation modeling/LISREL
Task analysis
Usability testing and evaluation

MOTOR BEHAVIOR
Eye movements, tracking
Coordinated action
Interpersonal coordination
Kinesiology
Motor control
Motor learning
Perception-action

Perceptual-motor performance
Reaction time
Skilled performance
Speech
Sport

NEUROERGONOMICS
Augmented cognition
Brain-computer interfaces
Cognitive neuroscience
Computational neuroscience
Neuroergonomics
Neuroimaging
Noninvasive brain stimulation

PHYSICAL/AMBIENT ENVIRONMENT
Extreme environments
G forces
Illumination
Noise/acoustics
Temperature
Toxins
Vibration

PHYSIOLOGICAL AND PSYCHOLOGICAL CONDITIONS ("INTERNAL ENVIRONMENT")
Boredom, monotony
Effort
Fatigue
Induced states (e.g., drugs)
Motivation
Physiology
Physiological psychology
Sensory deprivation/overload
Sleep, work/rest cycles, circadian rhythms
Stress

SENSORY AND PERCEPTUAL PROCESSES
Audition
Gustation
Haptic/touch
Kinesthesis, proprioception, orientation, balance
Multisensory integration
Olfaction
Perception-action
Speech perception
Vision

SIMULATION AND VIRTUAL REALITY
Artificial intelligence
Continuous simulation
Discrete simulation
Immersive environments
Motion sickness
Presence
Simulation and training
Simulation-based skill acquisition

Simulator sickness
Virtual environments

SOCIAL PROCESSES
Affective factors
Group processes
Social media
Social psychology
Transactive memory

SPECIAL POPULATIONS
Children
Mental disabilities
Physical disabilities
Universal design

SURFACE TRANSPORTATION
Aggressive and risky driving
Agricultural systems
Autonomous driving
Bicycle and pedestrian safety
Distraction
Driver behavior

Driver impairment: drowsiness, alcohol, drugs
Highway sytems
Intelligent vehicle systems
Maritime systems
Nighttime visibility
Railway
Smart cars
Teen drivers
Vehiclle automation
Vehicle design

SYSTEM DESIGN AND ANALYSIS (GENERAL)
System design
System analysis
Work domain analysis

TEAMS AND GROUPS
Communication analysis
Shared/team mental models
Team cognition
Team collaboration

Team communication
Team coordination
Team dynamics
Team situation awareness
Team training
Transactive memory

TRAINING, EDUCATION, INSTRUCTIONAL SYSTEMS
Distance learning
Distributed training
Embedded and cross training
Games
Instructional technologies
Intelligent tutors
Metacognition
Retention
Simulations
Synthetic task environments
Training evaluation
Transfer of training