

Bill of Materials — Human-Following Ackermann

v2

Item	Part Name	Description / Specs	Qty	Supplier / Part No.	Notes
E1	Teensy 4.1	600 MHz ARM Cortex-M7 MCU, 55 I/O pins	1	PJRC	Main controller (Layer 1–3)
E2	Jetson Orin Nano 8GB Dev Kit	1024-core GPU, 8GB RAM, AI compute	1	NVIDIA	Vision & AI processing
E3	Motor Driver – BTS7960	43 A high-power H-bridge	2	Amazon / eBay	Front & rear drive
E4	Motor Driver – BTS7980	55 A high-power H-bridge	1	Amazon / eBay	Steering control
E5	OAK-D Pro Wide	USB AI camera module	1	Luxonis	Runs vision pipeline
E6	LiPo Battery 3S 11.1V (≥5000 mAh)	Main power source	2	Hobby store	Power for drive & compute
E7	Buck Converter (12V→5V, 5A)	Power regulation	2	Amazon	Jetson & peripherals
E8	Step-Down Regulator (12V→7.4V)	Steering driver supply	1	Amazon	Clean supply for steering
E9	XT60 Connectors + Harness	High-current connectors	6	Amazon	Power distribution
E10	12 AWG Silicone Wire (red/black)	High-current wiring	5	Amazon	Drive power loom
E11	18 AWG Wire (signal)	Low-current wiring	10	Amazon	Signals/logic
E12	Inline Fuse Holder + Fuses	Protection	2	Amazon	Battery safety
E13	Ferrite USB-C Bead	EMI suppression	2	Amazon	Teensy/OAK-D USB
E14	USB-C Cable (short, shielded)	Data + power for OAK-D	1	Anker	Prefer 0.5 m shielded

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E15	USB Micro/Type-A Cable (shielded)	Teensy connection	1	Anker	Short, shielded
E16	Chassis Mounts & Brackets	Mechanical mounts	1	Custom	3D prints / aluminum
E17	Wheels/Tracks (Ackermann)	Locomotion	4	Donor RC	Usable donor parts
E18	Current Sensor (optional)	Stall monitoring	2	Pololu	Firmware support optional
E19	RC Kill Switch (optional)	Emergency stop	1	Spektrum	Safety accessory
E20	Misc. Hardware	Screws, standoffs, heatshrink	1	—	Build consumables

Note: Quantities and suppliers reflect the reference build; adjust to your inventory.