#BuildingOnCardano

A Collection of Development Resources

Start Building On Cardano & Help Protect Our Place Online!

An index of Cardano community projects, tools, channels, people & services that will help you get started!

[ ] = additional info, here no affiliation with the projects, they are just listed to help you with #BuildingOnCardano

I'm constantly adding to the index, so if you think I should add something that directly relates to building on Cardano, please let me know! Suggestions are not and have never been ☠

@JoeDiscussions

☠ This site is also available on Github

"Tax confusion, tax cunning"

Developers

Cardano Getting Started for Developers

+

Cardano Node CLI Reference | Cheatsheets

Gimbalabs

People Learning & Innovating Together

Plutus Project-based Learning Course

Build your app with MeshJS, React & Next.js

+

An interview with Jinglan about MeshJS

Lucid

Build on Cardano the easy way using JavaScript

+

plu-ts

DSL for smart contracts creation with a strong focus on transactions, all in Typescript

Helios

Helios is a non-Haskell alternative to Plutus that compiles to Plutus Core

+

Aiken

Programming language & toolchain for developing smart contracts

OpShin

OpShin: a Pythonic programming language for Smart Contracts

& Nebo Debian!

PyCardano

A Cardano library written in Python for building and signing transactions, works well with OpShin

+

demeter.run

Cardano is a set of primitives to work with Cardano Unspent Plutus Core that works on both 2PhV and Ledgerstate!

txpipe.io

Open source tools and infrastructure for Cardano developers

& Walletd Oneshot testing!

CardanoSharp Wallet

.NET Library for Creating/Managing Keys, Addresses, Building/Signing Transactions

+

Scalus

A cloud environment with all the tools for building your dApp

marlowe

Easily create, verify and deploy secure smart contracts on Cardano using ToUs & Marlowe!

Joget

Create a low code dApp using the Joget DX

+

BLOCKFROST

Your gateway (api) to the Cardano ecosystem

DANDELION

An all in one open source relayer to build on Cardano

Cardano APIs as a Community Service. Free Forever.

koios

A consistent query layer for developers to build upon Cardano

ogmios

A lightweight bridge interface for cardano-node

Cardano Beam

GPS based Assets on the Cardano Blockchain

IntelliAda by Blockfrost

A tool for developers to interact with Cardano directly from their IDE

MERCURY

Integrate Mercury Chat into your Cardano dApp

Nebula

A Cardano NFT marketplace contract for individual projects

Guides

CARDANO PRESS

Connecting WordPress & Cardano

Create engaging & unique #NonFungibleTokens with CardanoPress with no development knowledge

& Some Live Case Templates

Blink Labs

Building open source technology for the future of decentralized global identity, verifiable credentials, smart contracting tool, for scaled apps, invoicing, Cluster Images

Strica

A Cardanoscan network library written in typescript with multi-sig streaming module

+

Purescript Library Cardano Transaction NSI

Hoeded library for balancing transactions (dquadrant/lucid)

basic smart contracts

Apollo: Go Library

Atomic Swap Open Protocol

More dev tools listed @ Developers Cardano ☠ CardanoCube ☠ Essential Cardano ☠ Cardano Fans ☠ BuilDfCardano Dev Tools ☠ WalletConnect Library ☠

maestro

Indexer, Tx/Sy Transactions & Manager

Share The Love

A lot of the projects are self-funded, so check if they have a donations address / alohandle to support their ongoing work & some projects are listed @ Fixes ☠

I'm new to Cardano development, where do I start?

☠ Check out the guides above ☠

☠ Check out the diagrams below ☠

☠ Cardano Fundamentals by BuildSpace ☠

☠ Overview Diagram (PDF) ☠

☠ EUTXO(M) Dictionary ☠

☠ Connect with Community on Twitter ☠

☠ Native Tokens (NFTs & FT) by NerdCat (Andrew Westberg) ☠

☠ How To Submit Transactions Using The cardano-cli ☠

Tunla has created some "mini guides" to show the basics of interacting with a wallet or developing a dApp!

Blockchained Developer Diaries, a journey to becoming a Cardano Dev ☠

The super experienced and supportive team over at Cardanians have a stack of learning resources & run weekly live coding sessions! ☠

If you are an experienced React/Next.js coder, then check out the MeshJS Starter Kits ☠

If you are an experienced Python coder, then check out PyCardano example ☠

Cardano Smart Contract from zero to mainnet in 5 minutes using Helios ☠

☠ Blockchain Class @ ADAFULLAB ☠

☠ Latest Cardano News @notchainbased ☠

☠ How to use Cardano-CLI installed with the Daedalus Full Node Wallet ☠

"Hello World" Coding Quick Starts

Lucid ☠ Hosted Modules & Browser Compatible Transaction Composer Framework	PyCardano ☠ Submit Transactions using Python	Helios ☠ Build on Plutus Core Script	Demeter ☠ Hosted Cardano Infrastructure with Stable APIs
Plu-ts ☠ Build On Plutus Script Code Using Deno	Aiken ☠ Build on Plutus Core Script	Plutus Tx ☠ Build On Plutus Script Code Using Haskell	
OpShin ☠ Build On Plutus Script Code Using Python			

Dev Discussions, Chatting, Getting Help ...

Check out the Cardano Forum Discussions ☠

☠ Follow the BuildingOnCardano dev List ☠

☠ Join the BuildingOnCardano Dev Channel ☠

Check out Cardano.stackexchange.com ☠

Join the ADA Pool Discord server for dev chatting & getting help ☠

Join Cardano Spot ☠

ADAPulse ☠

This Week in Cardano Newsletter ☠

Help I Need Inspiration & Energy To Start/Keep On Building ...

Charles Whitehead Video ☠

Why we keep on keeping on by Charles ☠

Interview with Charles: Why Decentralization, Limitations of 2nd Gen Blockchain & How Cardano Fixes It ☠

Some Open-Source Code By Cardano Projects

MuesliSwap

Minswap

JPG Store

Explorer/CSMT Fed

ADAO

Spectrum-Finance

AADA Finance

dcSpark

AXRWallet

DinoSol

Local Marketplace

Liquid Finance

WingRiders

Berry Pool

Teaserfoxfo

NMKR Wallet

Cardano Swaps (DEX)

Tesla/swap

Kiwoki

LibreCoin

WELD

Indigo Protocol

LinPayA II

Homebates

Wild Tango!

PIOY Oracle

Lace Wallet

Lobster Challenge

+

Cardanians Community Open Source Projects ☠ github.com

Projects on dripdot3/Cardano.com with green icon next to them

@PoolPOS/Cardano Open Source Project Tracking ☠ Live Projects ☠

Cardano Project Contests on GitHub @ cardanoupdates.com

Some Channels/People To Follow

Learn Cardano	Army of Spies	Spicy Dumpling Show	
Cardano With Paul	JOKIPITO	dripp Central	
big pep	Aaron Crapio	NerdCat	
PSAHQ	Troy Week In Cardano	ADA Ping	
Cardano	Woodlands	Africa on Chain	
D'Alpoet (El Lamington)		Cardano Easy!	

Services

ANVIL	XANGE	
jpg.store/Studio	OpenCNFT	
CNAME.io	Orcfax Standards Based Oracle	
Singularity.NET	Aada.io (PFI)	
Pixels (PFI)	Arweave.org	
NOMPhenomena	FungiPhenomena	
Lobster	Kiln + Stakefarmer	
Reveler (Gaming)	Draet	
Blockery	Mutrey Smart Contracts	
HAZELnet (a Discord Integration)	Clarity DAO Tooling	
SumoonePlatform (a DAO Tooling)	GenSearch.dev	
ingon (Storage)		

SSI (VIDs/VCs)

Self Sovereign Identity Book

RoyalModule

eNetwork: Trust in Learning Achievements Using SSI

Atala Prism

Learn Cardano: Atlasian Prism Proof/Space Telling About SSI

ADAPulse: Atala PRISM Prototypes for Self Sovereign Identity

World Mobile: Decentralized Identities: An Introduction

UNITE Chrome Extension

SSI Blog Resources

bcdb, BasedB Encoder/Decoder JS Library

Elliptic, Fast elliptic curve cryptography for JavaScript

W3C DID Specs, Methods Registry

Network

CIP 19 - Cardano Addresses

Post pm: Dates Post Artifacts & Network Load

Cardanoscan.io

Cexplorer.io

ADASTAT.net

eUTXO.org - Visual Blockchain Explorer

Scan Chain Stake Kit

Milkshi

IOG: Cardanoscan & Collective State Pool Protocol

Cardanocube, Walletkit

NodeShark, A Transaction Visualization Tool

Cardano, Register Tokens

Minswap, Verify Tokens

Dynamic Pool-To-Pool by Outnash Crucible

The Rosen Bridge: A Distributed Network for Cross-Chain Settlement

Tutorial on Cardano Data Definition Language (CDDL) for JSON and CBOR data

Mitsumedo, L2 Side-chain (Build using Sidefoliy)

IOG Network Diagrams

ADAPulse: Zero Knowledge (ZK) Tech on Cardano

IOG, Example EVM Extension Technical Specification

IOG, Tiered Mechanisms for Blockchain Transaction Fees

BinaOwl, Multisig Wallet

Strica, Cardanoscan network library written in typescript with multi-sig streaming module

Hydra, Scaling the network

☠ Hydra Docs

☠ Hydra Tutorial

☠ Hydra Tx Bench

☠ Hydra Voting Proof Of Concept Node

☠ Hydraw, First Ecosystem app

☠ Hydraw Transactions on Cardanoscan

☠ Hydra Java Client

☠ Cardanoscan Tx Stream Lightning Node

Network Governance

CIP 1694, Governance Works In Progress!

☠ Is a Rudimentary Flow Diagram by Alex Plus

☠ Plutus Foundation Proposals Are Up! Year 1

☠ Proposal Voting Dashboard

☠ Cardano Governance Tracker

☠ Discussion on Such Governance Developments

☠ CIO Research: A Series Thematic Analysis of Delegation Incentives in Blockchain Governance

☠ CIO Research: Decentralization Governance with Semi-Strategic Experts

CIPs of Interest

What Are Cardano Improvement Proposals (CIPs) & Why?

CIP-36, Cardano dApp-Wallet Web Bridge

CIP-21, Reference Inputs

CIP-32, Inline Datums

CIP-33, Reference Scripts

CIP-47, Asset Name Label Registry

CIP-68, Datum Metadata Standard (Dynamic NFTs)

CIP-88, Native Asset Pooling Registration/Information Certificates

CIP-94, Polls

Infrastructure

Cardano: Setting up a Stake Pool

ADAOnly,Marmalade, Stake Pool Operator Scripts

BUIDl Stake Pool Operator Scripts

CIP-36, Reference Scripts

CIP-45, Peer Sharing Specification

CIP-46, Dalium Metadata Standard (Dynamic NFTs)

CIP-88, Native Asset Pooling Registration/Information Certificates

CIP-94, Polls

Infrastructure

Cardano: Setting up a Stake Pool

ADAOnly,Marmalade, Stake Pool Operator Scripts

BUIDl Stake Pool Operator Scripts

CIP-36, Reference Scripts

CIP-45, Peer Sharing Specification

CIP-46, Dalium Metadata Standard (Dynamic NFTs)

CIP-88, Native Asset Pooling Registration/Information Certificates

CIP-94, Polls

Liqwid; Liquidation Bot

TeddySwap; How to Run a Batcher/Badger

Cardano Private-Testnet / Devnet Setup

cSnapshots.io; Download the Latest Cardano Bockhain Snapshot

Related Dev Resources

VSCode (Code Editing)

Firesho io (Courses)

Fluree; Data Management Tooling

Plutus-Bench; Benchmarking for Cardano Smart Contract languages

Example: plutus-k | CuShin | helsi

Java app testing on Cardano blockchain with Yaci Cardano Test Java library

Using Cardano Lucid on Svelte

How to fix an issue installing Node "canvas" on macOS

Bytes.dev; JavaScript News

fresh.deno.dev; Next-gen web framework

Gaming Dev Resources

Human-Centric Design; Octalysis Framework for Gamification

Open Source Game Engine Integration Demo By @KnitIties | 🕹 |

Revelar Game Engine

Paima Studios Game Engine

Cardano games assets for Unity

CardanoBeam; GPS Based Smart Contracts

Access the NMKR-Studio API from Unity

DEGA; Infrastructure & Transactions For Gaming/Metaverses

Gaming Community

Cardano Gaming

Cardano Gaming Guild

CardanoCube #GamesOnCardano

(View Projects & Add Your Project)

Related Design Resources

Human-Centric Design; Octalysis Framework

CSS; Light/Dark Mode Based On OS User Setting

CSS; Background Gradients

components.ai; Open-source Dogin Tool

Staying Safe On-Chain!

Tips to protect yourself and share with the users of your apps/dAapps.

IOG; Cybersecurity guidelines for Cardano users

epochsec.io; Weekly Podcast & CyberSecurity Advice

virustotal.com; URL Checker

Using Your Ledger as a FIDO U2F Device (like a Yubi key)

Exporting your Ledger Accounts (Be Careful!!!)

auditocean.com; Decentralised Audits

EpochSec (Kyle) Interview with Paul.

Information Security & Quality Assurance

Resources for building and host Cardano based Apps, dAapps & Services securely.

IOG; Certification Levels for Smart Contracts

ISO 27001; Standard for Information Security Management Systems

CIPS2; Cardano Audit Best Practice Guidelines

GDPR checklist for data controllers

openEDR; Open Source Endpoint Detection and Response (EDR)

Some Auditing Services

CERTIK; Security Auditing

FYEO.io; Security Auditing

Anastasia Labs; Security Auditing

Artificial Intelligence (AI) Resources

Including Large Language Models (LLMs) & GPT ...

GPT-4 - How does it work, and how do I build apps with it?

SingularityNet Ecosystem

opshinGPT; Experimental chatbot to support users at writing OpShin Smart Contracts

Tips and tricks for working with Large Language Models

Things

Adosia; Decentralized Manufacturing Platform that provides economic opportunities for creators, hobbyists, and small business manufacturers

Educational Resources

learncardano.io

essentialcardano.io

essentialcardano.io; Working Groups

education.cardanofoundation.org

DirectEd Development Foundation

"Cardano For The Masses" Book.

Just the Metrics (Sooraj & Laura)

LIDO Nation (Education, Outreach, Community Building)

education.emurgo.io

UZH Summer School: Deep Dive into Blockchain

blockchainlearning.center; Cardano Developer Series

Plutus Pioneer Program

ADAPulse; Tokenization a Beginners Guide

Cardano Journal; Explaining Cardano's eUTXO model for a five-year-old

ADAFILMS; Cardano Facts as Short Docos

ADAPulse; Cardano Swaps: A DEX that taps into the full potential of the eUTXO model

Dynamic Strategies; Shared Workshop Content Guide

Alliances

Web3 User Group

Blockchain Infrastructure (CBIA)

Single Stake Pool Operators

Armada Stake Pool Operators

Cardano Gaming Guild

Cardano Gaming

DeFi

ReaIFi

NFT Guild

Music

Project Resourcing

Business Model Canvas

projectcatalyst.io

Kreate; Community funding for projects

Crystal; Project DAO Infrastructure

dApp360; Placing web3 & dapp developers

kompact; Design, Coding & Deployment Assistance

ncoding.at; Freelancer Software Engineer

dcSpark; We build high-quality crypto products

CardanoJobs

We Help Companies Find Talent on Cardano

Cardano Project Showcase (Register Your Project)

assna.com; Enable teams to work together

#CardanoCommunityTech

Some tech focused people to engage with on Twitter for learning &/or maybe help with your project.

Use the calendar icon to book an online meeting!

Sebastien Guillemot	Patrick Tobler
KtorZ	monad_alexander
Adam Dean	Ales
Charles Hoskinson	Jingles
Rick McCracken	Andrew Westberg
Pi Lanningham	James Dunseith
Lucas	Andrew Knittes
zygomeb	Sebastian Nagel
Michele | Harmonic	Pete Bul
Marek Mahut	$matwinnetou
Mark Byers	Ninh Ike
Clover Nodes	Pavan Vora
holymacaroni	Anthony
Tucker Triggs	Jared Corduan
Laura	Ashish Prajapati
Daniel Epstein	Lloyd Duhon
Michael Liesenfeld	Marco Meerman
Homan	Daniel Rodriguez
Mehul Prajapati	Prashanth Sooriteju
Tom Stokes	Kyle Solomon
Anthony McDonough	Conrad
Guillermo (WoodlandPools)	CryptoJoe101
dcSpark	ELRauilio_CNFT

If you would like to engage with people new to building on Cardano, then message me @sebfranzOnDo and I will add you to the list above!

Plus the BuildingOnCardano.dev | |

& the BuildingOnCardano.dev Community

Some Conceptualisation Diagrams

How it fits together - Kernel/Dom Layers, Offchain, Back-stack ...

Click for the enlarged/more detailed diagram.

sidstrom-foundation/diagrams

Some of the technical details about wallets, addresses, accounts have been simplified to help communicate the core concepts.

Supported by Octo @ sidstrm.io

Getting On-Chain Order

Why sidstrm.io uses Cardano for On-Chain Technology

Chat on Discord

I have supported the Web3.0 Project with a donation, you can too!

LITERAPER covering the future of this site is coming soon!

It will cover the potential for this site to be a Cardano dApp and also as a worked example of Proof of Reputation (PoR) for recognizing community support - beyond being a member of the owning Cardano community! :)

We are currently collecting input from the community on what they would like this to become.

Have Your Say!

#CardanoCommunity

Contributing to a Decentralised Society.

All BuildingOnCardano.dev & sidstrm.io content shared as CC0 (Public Domain)

Aeternity, The Transformation of the Network.

This site is also available on GitHub