Git Workflow & Auto Checkpoint System - Guide

Version: 1.0 | Created: 2025-08-27 11:53

1. Overview / Scope

This document summarizes the automatic checkpoint commits, Git LFS, and GitHub Actions CI setup configured in the repository. These changes only affect development workflow (version control, large files, CI) and do not impact the application runtime logic.

2. Configuration Summary (Current Status)

- Git LFS: Installed, .gitattributes committed
- Tracked extensions: *.glb, *.gltf, *.png, *.jpg
- Auto checkpoint: scripts/checkpoint.js working (create/delete tests passed)
- NPM scripts: checkpoint, autocommit, push, push:feature available
- Recommended: main branch protection + PR-based merge

3. Daily Workflow (with Claude Code)

1) Start work
  - git checkout -b feature/<feature-name>
  - Run npm run autocommit in separate terminal (auto detect/checkpoint)

2) During work
  - Auto commit on each change detected (message: chore: checkpoint ...)

3) Push/PR
  - npm run push or first upstream npm run push:feature
  - gh pr create -f -B main -H feature/<feature-name>

4) Important
  - Never commit directly to main → Always PR from feature branch
  - Never commit .env*, dist/ (.gitignore configured)
  - Large binaries managed by LFS

4. Branch Protection (GitHub)

GitHub → Settings → Branches → Add rule
- Branch name pattern: main
- ☒ Require a pull request before merging
- ☒ Require status checks to pass
- ☒ Require conversation resolution
- ☒ Include administrators

5. CI/CD (GitHub Actions Example)

```
name: CI
on:
  push:
    branches: [ main, develop, 'feature/**' ]
  pull_request:
    branches: [ main ]
jobs:
  build:
    runs-on: ubuntu-latest
    strategy:
      matrix:
        node: [18, 20]
    steps:
      - uses: actions/checkout@v4
        with:
          lfs: true
      - run: git lfs install && git lfs pull
      - uses: actions/setup-node@v4
        with:
          node-version: ${{ matrix.node }}
          cache: npm
      - run: npm ci
      - run: npm run lint
      - run: npm test -- --run
      - run: npm run build
```

6. Auto Commit Components

6.1 NPM Scripts (package.json)

```
"scripts": {
  "checkpoint": "node scripts/checkpoint.js",
  "autocommit": "chokidar \"src/**/*\" \"public/**/*\" \"package.json\" -i \"dist/**\" -i \"**/*.map\"
  "push": "git push origin HEAD",
  "push:feature": "git push -u origin $(git branch --show-current)"
}
```

6.2 Checkpoint Script (scripts/checkpoint.js)

```
#!/usr/bin/env node
import { execSync } from 'node:child_process';

function run(cmd){ execSync(cmd,{stdio:'inherit'}); }

try{
  run('git add -A'); // Stage all changes
  const msg = `chore: checkpoint ${new Date().toISOString()}`;
  run(`git commit -m "${msg}"`);
}catch(e){
  console.log('No changes to commit.');
}
```

7. Large Files (Git LFS)

• Install/activate: brew install git-lfs → git lfs install

• Tracked extensions: *.glb, *.gltf, *.png, *.jpg

• In CI: actions/checkout@v4 with lfs: true + git lfs pull

8. Security/Operations Rules

- Never record Secrets/PAT in repo or docs (use gh auth login)
- Never commit/push directly to main → Always PR from feature branch
- Use auto commit for work units, pause watcher during bulk changes

9. Troubleshooting / Rollback

- `Stop watcher: Ctrl+C (terminate autocommit)`
- `Restore files: git checkout -- scripts/checkpoint.js package.json .gitattributes .gitignore`
- `Discard branch: git checkout main && git branch -D feature/auto-commit-setup`
- `Disable LFS: git lfs untrack "*.glb" "*.gltf" "*.png" "*.jpg" then commit .gitattributes`

Appendix A. Pull Request Template

```
## Summary
- Changes:

## Checklist
- [ ] Tests/lint/build pass
- [ ] DXF/3D changes include snapshot/entity count tests
- [ ] Docs (README/CLAUDE.md/docs) updated
```

Appendix B. CODEOWNERS Example

```
* @leejinsoo1979
src/editor/** @leejinsoo1979
```